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REPORT

ON THE

Underground Water Supply of San Francisco County

PRESENT YIELD
PROBABLE ADDITIONAL YIELD

Prepared under the direction of

M. M. O'SHAUGHNESSY, City Engineer

By

M. J. BARTELL, Hydraulic Engineer

SAN FRANCISCO, CALIFORNIA
MAY, 1913

[illegible]

REPORT

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Underground Water Supply
# of San Francisco County

PRESENT YIELD—PROBABLE ADDITIONAL YIELD

Prepared Under the Direction Of
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CITY AND COUNTY OF SAN FRANCISCO

Department of Public Works
Bureau of Engineering
Room 724 City Hall

San Francisco, California,
May 24, 1913.

Mr. M. M. O'Shaughnessy,
City Engineer,
San Francisco, Calif.

Dear Sir:—

I transmit herewith a report dealing with the underground water supply of San Francisco County—present yield, and probable additional yield.

For the purpose of this report, the County was thoroughly canvassed and well data was obtained on about 700 wells. It is believed that data has been obtained on over 90 per cent of the wells in the city.

The total yield of these wells (including the Golden Gate Park Supply and the waters now drawn from Lobos Creek by the War Department) is about eight and one-half million gallons daily.

It is estimated that about three million eight hundred thousand gallons daily additional can be developed from sources as follows:—

Location	Estimated Probable Additional Development Gallons Daily
Sunset and Richmond Districts	3,000,000
Richmond District—South of Mountain Lake	100,000
Islais Creek—Vicinity of Balboa Park	400,000
Islais Creek—Noe Valley Vincinity	100,000
Mission Creek District—at Jefferson Square, Columbia Square, near Mission High School	200,000
Total	3,800,000

This estimate is approximate only.

The data for the developed and partially developed areas is quite full but for the areas giving promise of the greatest future development, the Sunset and Richmond Districts, the data is quite meager and some further field work will be necessary before definite conclusions can be drawn.

There is presented herewith as a part of this report:—

A tabulation of the well data, with a complete index, pages 4–101 inclusive.
A tabulation of the well logs, with a complete index, pages 103–133 inclusive.
A brief discussion of the geology and its relation to the underground waters, pages 134–136 inclusive.
A short chapter on Bacteriological tests of well waters, pages 151–153 inclusive.
Data on the cost of well casing and well boring, pages 154–157 inclusive.
Three maps and six sheets, as follows:—

Map No. 1, page 158—shows the location of the various springs, test holes, etc., and at such points where the data was available is shown the elevation of the underground water table.

Map No. 2, page 159—shows the geology of San Francisco County, reproduced from a map prepared by Andrew C. Lawson.

Map No. 3, page 160—shows the topography of San Francisco County and a small portion of San Mateo County adjoining, upon which is shown the various catchment areas, present yield from underground water sources and probable additional available yield.

Sheet Nos. 4–9 inclusive, pages 161–166 inclusive, show geological sections, underground water table, etc.

Respectfully submitted,
M. J. BARTELL,
Hydraulic Engineer

Well Data

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Note: Under column headed "Size":

S = Surface or Outside casing, the space between which and the inside casing is filled with cement mortar.
O = Outside casing as above, the space being filled with gravel or crushed rock instead of cement mortar.
I = Inside casing.

Under column headed "Pump - Size":

S = Single acting.
D = Double acting.

Well Data—San Francisco Wells

A complete field canvass of the wells in the County has been made and such information as could be obtained from the engineers at the pumping plants, well borers and others has been obtained. Information was obtained on about 700 wells and it is thought that this number represents substantially the total number of wells now in existence. The canvass has been quite thorough.

Considerable difficulty has been encountered in the collection of well logs, particularly in the district destroyed by the fire of 1906.

Log records were obtained for about 300 wells and test holes.

The information gained by the field canvass has made it possible to make quite a reliable estimate of the amount of water now being drawn from San Francisco County.

The field records, with a complete index preceding, are presented in tabulated form on pages 19 to 101 inclusive.

The logs of materials penetrated when wells were dug, are presented as a separate tabulation with a complete index preceding. See pages 103 to 133 inclusive.

Tests of wells and pertinent data, see table and discussion pages 137 to 143 inclusive.

Brief chapters dealing with costs of well casing and well drilling and Bacteriological Tests of well waters are presented at the conclusion of this report.

It will be noted that on many of the wells, the depth to water is not given and on many of the wells at which the depth to water is given, the elevation of the water table as shown from these wells is quite erratic.

On most of the wells visited, access to the wells for the purpose of measurement of the water table is only possible when the pump is removed for repairs or the cleaning of the well. The bed plates for the deep well pumps, as a very general rule, cover the entire area of the well. Where possible, the water table was actually measured with a tape and these are specially noted in the tabulation.

In several districts, particularly in the Mission Creek District, along Market Street from the water front to 12th Street and in the vicinity of 17th and Harrison streets, the number of wells and the amounts of water pumped are so great that the water table fluctuates throughout very wide ranges. Much of the data on the elevation of the underground water table was obtained from the engineers at the various pumping plants, owners, etc. At these wells, where the elevation of the underground water table shows a considerable discrepancy from that of adjacent wells, the depth to water as given in the tabulation pages 17 to 90 inclusive, is questioned thus "115 ?", by which it is meant that the figure given is probably incorrect.

A careful study of the elevations of the water table as given on map page 158, will reveal many other points at which the elevations are probably incorrect, but as before noted, on account of the great number of wells and the very material amount of water drawn by them. makes a definite determination of the water table practically impossible and therefore only the extreme variations are questioned.

Index of General Well Data.

SAN FRANCISCO COUNTY

Well No.	Page No.	NAME	District	Yield Daily Gals.
1	45	Jerome Garage	Harbor View	15,000
2	45	Burr	" "	5,000
3	45	Burr (Demaria)	" "	5,000
4	45	Burr (N. E. Van Ness and Filbert)	" "	1,000
5	46	Pacific Nursery Company	" "	Abandoned
6	46	Wunder Brewery	" "	
7	46	Golden Gate Steam Laundry	" "	Abandoned
8	46	Golden Gate Steam Laundry	" "	Not yet in use
8a	46	Golden Gate Steam Laundry	" "	
9	46	Mondial Liberty Bottling Works	" "	1,000
10	46	Golden Gate Distillery	" "	20,000
11	68	U. R. R. Company	Islais Creek—Excelsior & Ocean	13,000
12	69	U. R. R. Company	" "	10,000
13	70	Arata	" "	1,000
14	70	Crocker Estate Company	" "	Temp. out of use
15	69	Crocker Estate Company	" "	25,000
16	69	Crocker Tract Land Company	" "	Abandoned
17	73	F. Cresta	" "	200
18	73	Hayes Park Laundry	" "	15,000
19	72	Reichardt	" "	500
20	73	L. Cavagnero	" "	500
21	73	G. Descagnia	" "	4,000
22	73	Cereghino	" "	20,000 (2 wells)
23a to 23w, incl.	41	Twin Peaks	Mission Creek—Eureka Val. Vicinity	Test Holes
23 to 31, incl.	97	Twin Peaks	Lobos Creek	Test Holes
31a to 31g, incl.	97	Twin Peaks	" "	Test Holes
32	97	Ruhland	" "	Abandoned
32a	99	U. R. R. Company	" "	Abandoned
33a to 33d, incl.	97	Old French-German and Italian Cemeteries	" "	2,000
34	97	Kenney	" "	800
35a-b–c & d	97 97	Lagomarsino	" "	(4 wells–abandoned)
36	97	French Hospital	" "	80,000
37	98	Hahnemann Hospital	" "	Not yet in use
38	98	Children's Hospital	" "	No water
39	98	Mme. Loustan	" "	5,000
40	98	Laurel Hill Cemetery	" "	(2 wells) 70,000
40a	98	Laurel Hill Cemetery	" "	
41	98	Odd Fellows Cemetery	" "	7,000
42	98	Ferries & Cliff Ry. Company	" "	Abandoned
43	98	Calvary Cemetery	" "	2,000
44	98	Little Sisters of the Poor	" "	5,000
45	98	Maria Kip Orphanage	" "	2,500
46	99	S. F. Nursery for Homeless Children	" "	3,500
47	99	John Griely	" "	1,400
48	89	C. F. A. Last	Lake Merced and Sunset	2,000
49	89	Witham	" "	200
50	89	Greenfield	" "	Out of use

INDEX OF GENERAL WELL DATA

SAN FRANCISCO COUNTY

Well No.	Page No.	NAME	District	Daily Yield Gals.
51	89	R. P. Reed	Lake Merced and Sunset	50
52	89	Jas. Cairns	“ “	Out of use
53	89	John Phelan	“ “	200
54	89	Chas. Mitchell	“ “	3,000
55	89	A. P. Hotaling	“ “	Abandoned
56	89	Olympic Salt Water Company	“ “	5,000
57	89	Sutro Estate	“ “	Dry
58	90	Sheehan's (Hotaling Owner)	“ “	Abandoned
59	90	U. S. Life Saving Service	“ “	500
60	90	W. W. Thayer	“ “	200
61	90	Hannum	“ “	Out of use
62	90	Mrs. Abbie L. Patriarche	“ “	100
63	90	J. W. Setterberg	“ “	200
64	90	Mullen	“ “	200
65	90	Pasmore	“ “	200
66	90	Jennicke	“ “	100
67	90	Irvine	“ “	500
68	90	J. R. Andrus	“ “	250
69	91	Nathanson	“ “	200
70	91	Nathanson	“ “	Abandoned
71	91	Mrs. Twist-Daiss	“ “	3,500
72	91	Shorty Roberts	“ “	1,000
73	91	Stephen Salles	“ “	100
74	91	Capt. John Loane	“ “	475
75	91	W. W. Fairbanks	“ “	100
76	91	Dibble	“ “	3,000
77	91	McCarthy	“ “	500
78	91	Mr. Alexander Russell	“ “	10,000
79	91	E. F. Dingley	“ “	Not in use
80	92	C. P. Gindicelli	“ “	100
81	92	E. Webb	“ “	3,000
82	92	Spring Valley Water Co. property	“ “	45,000
82a	92	Spring Valley Water Co. property	“ “	45,000
83	92	Merced Ranch	“ “	20,000
84	92	Merced Ranch	“ “	30,000
85	92	Toy	“ “	8,000
86	92	Chas. Pickard	“ “	20
87	92	Chas. Lee	“ “	100
88	92	Bare	“ “	100
89	93	Chas. White	“ “	1,000
90	93	John Gustavson	“ “	200
91	93	Chas. Kruck	Lake Merced and Sunset	200
92	93	M. B. Brady	“ “	Abandoned
93	93	Earl G. Larsen	“ “	1,000
94	93	Healey	“ “	100
95	93	T. H. Mitchell	“ “	200
96	93	Duke	“ “	200
97	93	Mrs. Hasty	“ “	100
98	93	Mrs. A. C. Friend-Ward	“ “	500
99	93	Mr. Lang	“ “	400
100	94	Carl C. Larsen	“ “	500
101	94	R. Bodie	“ “	Dry
102	94	G. S. Tulloch	“ “	Dry
103	94	Thos. Learned	“ “	Dry
104	35	Farnsworth	Mission Creek—Park Panhandle.	
104a	35	Farnsworth		Abandoned
105	35	St. Mary's Hospital	“ “	16,000

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SAN FRANCISCO COUNTY

Well No.	Page No.	NAME	District	Daily Yield Gals.
106	35	U. R. R. Company	Mission Creek—Park Panhandle	(2 wells Temp. abandoned)
106a	35	U. R. R. Company	" "	
107a	35	German Hospital	" "	Abandoned
107b	35	German Hospital	" "	Abandoned
108	35	German Hospital	" "	25,000
109	37	Hesthal-Duboce Apartments	Mission Creek—Eureka Valley...	Not used now
110	37	California Brewing Company	" "	9,000
111	37	Otto Luhn's Soap Works	" "	1,100
112	37	Jaquemot	" "	Temp. out of use
113a-b & c	37	New Method Laundry	" "	(3 wells) 70,000
114a-b c & d	37	National Laundry	" "	51,000 (4 wells-2 used)
115	38	Atchison Mill Co	" "	800
115a	38	Atchison Mill Co	" "	Abandoned
116	38	Dairy Delivery Company	" "	40,000
117	38	Standard Milk Company	" "	20,000
118	38	National Ice Cream Co.	" "	20,000
119	38	College of Notre Dame	" "	20,000
120	38	Home Laundry	" "	50,000
121	38	Gartland Apartments	" "	Out of use
122	38	Sterling Laundry Co	" "	(2 wells) 70,000
123	30	Levi Strauss & Company	Mission Creek, Hayes Valley...	3,200
124	30	U. R. R. Company	" "	Not in use
125	30	Sanitary Laundry Company	" "	60,000
126	30	Atlas Laundry Company	" "	15,000
127	30	American Laundry Company	" "	50,000
128	38	San Mateo County Dairy	Mission Creek—Eureka Valley...	20,000
129	38	Mission Hotel (J. W. Smith)	" "	38,000
130	39	Krug & Zimmerman Malting Co.	" "	60,000
131	39	Old Homestead Bakery	" "	15,000
132	39	Center	" "	(2 wells) 45,000
133	39	Golden Gate Steam Laundry	" "	Abandoned
134a & b	39	Allec Cleaning & Dyeing Works	Mission Creek—Eureka Valley...	25,000 (2 wells)
135	39	Broadway Brewing Company	" "	14,400
136	39	Tacoma Bottling Co	" "	20,000
137	40	Crescent Feather Company	" "	2,000
138	40	Fredericksburg Brewing Company	" "	Discontinued
139	40	Union Brewing Company	" "	10,000
140a & b	40	Independent Laundry Company	" "	58,000 (2 wells)
141	40	Bateman's Mill	" "	12,000
142a & b	40	Aetna Laundry	" "	21,000 (2 wells)
143	40	City Street Improvement Company	" "	10,000
144	41	H. Friedrichs	" "	1,500
145	41	Long's Syrup Refining Company	" "	2,000
146	41	Enterprise Brewing Company	" "	5,000
147	41	American Steel & Wire Company	" "	9,000
147b	41	American Steel & Wire Company	" "	Abandoned
148	41	Illinois Pacific Glass Company	" "	60,000
149	37	Townsend's	" "	2,000
150	57	St. Luke's Hospital	Islais Creek—Noe Valley....	Very little water
151	57	U. R. R. Company	" "	16,000

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SAN FRANCISCO COUNTY

Well No.	Page No.	NAME	District	Daily Yield Gals.
152	49	North Point Laundry Assn	North Beach	4,000
153	28	White Star Laundry	Mission Creek— City Hall	28,000
154a-b c & d	28	Galland Laundry Company	“ “	100,000 (4 wells)
155	28	Albany Brewery	“ “	15,000
156	28	Metropolitan Laundry Company	“ “	275,000
157	28	Consumers Ice Company	“ “	90,000
157a & b	28 28	Consumers Ice Company	“ “	Out of use
158	27	C. R. Splivalo	“ “	20,000
159	27	Ruffino & Bianchi	“ “	Abandoned
160	27	Pacific Pipe Tank Company	“ “	25,000
161		(Number not used)		
162	27	Overland Freight Transfer Co	“ “	5,000
163	26	Fleishman Clark	“ “	Out of use
164	26	Grant Building	“ “	8,000
165	26	U. S. Post Office	“ “	26,000
166	26	California Casket Company	“ “	3,000
166a	26	E. Rolkin	“ “	16,000
167	26	U. S. Mint	“ “	15,000
168	26	Hale Bros	“ “	12,000
169	24	Pacific Building	“ “	11,000
170	21	Humboldt Bank Bldg	Mission Creek— Ferry Vicinity	16,000
171	21	Municipal Light & Power Company	“ “	84,000
171a	21	Municipal Light & Power Company	“ “	8,000
172	21	Aronson Building	“ “	3,000
172a	20	Underwriter’s Fire Patrol	“ “	1,500
173	20	Rialto Building	“ “	Test hole
173a	20	Rialto Building	“ “	25,000
174	20	Langley & Michaels	“ “	1,000
174a	20	American Forge Company	Mission Creek— Ferry Vicinity	10,000
175	21	Monadnock Building	“ “	20,000
176	20	Wells Fargo Building	“ “	5,000
176a	20	Balboa Building	“ “	35,000
177	21	Palace Hotel	“ “	60,000
177a	21	Palace Hotel	“ “	Not used
178	22	(Number not used)		
179	19	Merchants Ice & Cold Storage Co	“ “	35,000
180	19	U. S. Custom House	“ “	20,000
181	19	Western Fish Company	“ “	25,000
182	19	American Fish Company	“ “	10,000
183	19	A. Paladini	“ “	10,000
184	19	Alaska Commercial Building	“ “	9,000
185	19	Merchants Exchange Building	“ “	26,000
185a	19	Insurance Exchange Building	“ “	No pump yet
186	19	Kohl Building	“ “	7,000
187	20	California Market	“ “	32,000
188	20	Mills Building	“ “	Emergency only
189	20	Holbrook Building	“ “	Not yet in use
190	21	Sutter Hotel	“ “	10,000
191	21	Crocker National Bank Building	“ “	25,000
191a	22	Foxcroft Building	“ “	Abandoned
192	21	Chronicle Building	“ “	30,000
193	21	Levi Strauss	“ “	3,000
194	21	Mutual Savings Bank Bldg	“ “	25,000
195	21	Hearst Building	“ “	25,000

INDEX OF GENERAL WELL DATA

SAN FRANCISCO COUNTY

Well No.	Page No.	NAME	District	Daily Yield Gals.
196	24	Phelan Building	Mission Creek—City Hall	10,000
197	24	Whitney Building	" "	35,000
198	24	Butler Building	" "	15,000
199	24	Flood Building	" "	30,000
200	24	Poodle Dog Hotel	" "	8,000
201	24	Bellevue Hotel	" "	40,000
202	25	Knights of Columbus Bldg	" "	400
203	25	Y M C A Building	" "	50,000
204	25	Prager's Department Store	" "	5,400
205	25	Hibernian Bank Building	" "	10,000
206	84	City and County	Visitacion Valley	70,000
207	84	M. Choen	" "	Not in use
208	84	Hildebrand	" "	150
209a-b	84	C. B. Pisano	" "	2,000
210	84	C. B. Huyess	" "	200
211	84	C. A. Luis	" "	Out of use
212	84	(No name given)	" "	500
213	84	(No name given)	" "	Dry
214	84	Theo. Wellar	" "	200
215	84	Mechida	" "	50
216	85	Laman	" "	500
217	85	Celeste—Vegetable Gardens	" "	Dry
218	85	Celeste—Vegetable Gardens	" "	1,000
219	85	Celeste—Vegetable Gardens	" "	1,000
220	85	Celeste—Vegetable Gardens	" "	(2 wells) 5,000
221	85	Celeste—Vegetable Gardens	" "	....
222-3 & 4	85 85	F. Ferrary	Visitacion Valley	25,000
225	85	Sechine	" "	(3 wells) 50,000
226-7	85	Sechine	" "	
228	85	Eisler	" "	200
229	86	S. P. Company	" "	Out of use
230	86	Pacific Bone & Fertilizer Co	" "	100,000
230a	86	Pacific Bone & Fertilizer Co	" "	(2 wells)
231-2-3-4	86 86	Pacific Gas and Electric Company	" "	....
235	86	Schwerin	" "	10,000
236	86	Schwerin	" "	10,000
237	86	Schwerin	" "	7,000
238	86	Schwerin	" "	500
239	86	Schwerin	" "	5,000
240-41	87	Schwerin	" "	(2 wells) 5,000
242	87	(No name given)—spring	" "	1,000
243	80	Mrs. Western	Bay View	100
244	25	L. H. Sly	Mission Creek—City Hall	Out of use
245	24	Granada Hotel	" "	Out of use
246	25	Lurline Baths	" "	15,000
247	25	Nougue & Geymot	" "	6,000
248	25	Mme. Lacoume	" "	5,000
249a	24	L. H. Sly	" "	Test hole
249b	22	L. H. Sly	Mission Creek—Ferry Vicinity	No Water
250	25	California St. Cable R. R. Power House	Mission Creek—City Hall	Abandoned
251	22	Old Bella Vista Hotel	Mission Creek—Ferry	Abandoned
252	22	Fairmount Hotel	" "	Test hole

INDEX OF GENERAL WELL DATA

SAN FRANCISCO COUNTY

Well No.	Page No.	NAME	District	Daily Yield Gals.
No no.	22	Mission St. Wharf	Mission Creek—Ferry	Test holes
253	25	St. John Apartments	Mission Creek—City Hall	Temp. out of use
253a	45	Estate of Claus Spreckels	Harbor View	No information
254	45	Mme. Ferran-Mme. Plegat	" "	16,000
255	45	Gassman-Trouillet Laundry	" "	10,000
256	27	Marin Co. Milk Produce	Mission Creek—City Hall	4,000
257	26	Hale Bros. (old well)	" "	No pump at present
258		(Number not used)		
259a & b	27	National Ice Company	" "	Abandoned
259c	27	National Ice Company	" "	144,000
260	27	McNab & Smith	" "	25,000
261	27	McGilvray Stone Company	" "	20,000
262	28	California Bottling Company	" "	10,000
263	28	P. Noonan Hibernian Brewery	" "	30,000
264	26	Hammam Baths	" "	10,000
265	24	Society of California Pioneers	" "	18,000
266	26	Jas. Buttgenback	" "	7,000
267	26	Wardrobe Laundry	" "	25,000
268	.....	(Number not used)		
269	35	S. P. Hospital	Mission Creek—Park Panhandle	6,000
270	35	Pacific Hebrew Orphanage	" "	Abandoned
271	33	Kelly—originally Bruppacher	Mission Creek—Hayes Valley	Out of use
271a	32	Christian Science Church	" "	....
272	33	Old Peoples Home	" "	8,000
273	33	St. Dominic	" "	2,000
274	32	Paillassou	" "	5,000
275	33	Cook Estate	" "	Abandoned
276	32	Geary St. P. & O. R. R	" "	Abandoned
277	33	Merced Dairy	" "	9,600
278	33	Palace Laundry Company	" "	25,000
279	33	Anixter & Sons (Riverdale Creamery)	" "	30,000
280	33	Lang Bros	" "	Abandoned
281	33	J. Bedecarrat	" "	No pump yet
282	32	Lang Bros	" "	Temp. out of use
283	32	Lang Bros	" "	Abandoned
284	32	Old Wieland's Brewery	" "	Abandoned
285	32	California Baking Company	" "	14,400
286	32	S. F. Laundry Association	" "	45,000
287	32	S. F. Laundry Association	" "	500
288	31	S. F. Laundry Association	" "	72,000
289	31	National Brewing Company	" "	45,000
290	31	National Brewing Company	" "	4,000
291	31	Cerciat Lace House French Laundry	" "	57,000
292	31	Standard Shirt Company	" "	12,000
293	31	Test Holes Civic Center	" "	....
294	31	Test Holes Civic Center	" "	....
295	33	Mt. Zion Hospital	" "	Not yet in use
296	31	F. Thomas Dyeing & Cleaning	" "	(2 wells)
296a	31	F. Thomas Dyeing & Cleaning	" "	65,000
297	31	James Lick Baths	" "	30,000
298	30	Milwaukee Brewery	" "	5,000
299	30	Jackson Brewery Company	" "	25,000
300	30	California Wet Wash Laundry	" "	7,000

INDEX OF GENERAL WELL DATA

SAN FRANCISCO COUNTY

Well No.	Page No.	NAME	District	Daily Yield Gals.
301	30	La Grande Laundry	Mission Creek—Hayes Valley	(3 wells) 80,000
301a	30	La Grande Laundry	" "	
301b	30	La Grande Laundry	" "	
302	30	L. & E. Emanuel	" "	5,000
303	31	Eagle Laundry	" "	45,000
304	24	Union Square Hotel	Mission Creek—City Hall	Out of use
305	37	City French Laundry	Mission Creek—Eureka Valley	2,000
306	20	Standard Oil Building	Mission Creek—Ferry Vicinity	Not yet in use
307	19	Hansford Building	" "	25,000
307a	19	Hansford Building	" "	25,000
308	49	Musto-Keenan Marble Works	North Beach	7,500
309	49	Pacific Cereal Association	" "	....
310	49	D. Ghiradelli	" "	20,000
311	45	Grand Garage (H. E. Bothin)	Harbor View	10,000
312	45	Atlas Garage	" "	7,000
313	45	D. Garibaldi	" "	Temp. out of use
314	46	Chas. Abraham	" "	1,000
315	46	G. F. Norton	" "	500
316	47	Pacific Gas & Electric Co.	" "	Out of use
317	47	Fulton Iron Works	" "	Abandoned
318	47	Hermann—Harbor View Baths	" "	Abandoned
319	47	Hermann—Harbor View Baths	" "	Abandoned
320	99	Sutro Estate	Lobos Creek	35
321	99	Sutro Estate	" "	200
321a	99	Sutro Estate	" "	....
322	35	Munck	Mission Creek—Park Panhandle	Abandoned
322a	35	Old Joost Water Works	" "	200
323	99	City (Sump)	Lobos Creek	577,000
324	99	U. S. Government	" "	Not in use
325	94	City	Lake Merced and Sunset	60,000
326	94	City	" "	77,000
327	43	Stone Yard	Mission Creek—North Potrero	Out of use
328	43	Sanitary Reduction Works	" "	16,000
329	43	L. H. Birth	" "	750
330	43	Fishbeck Soap Company	" "	6,000
331	43	Union Ice Company	" "	No pump installed
332	51	Howse	Islais Creek—So. Potrero & Butchertown	200
333	51	A. Raymond	" "	2,500
334a-b	40	Sisters of Mercy	Mission Creek—Eureka Valley	4,000
335	51	Tubbs Cordage Company	Islais Creek—So. Potrero & Butchertown	8,000
336	51	California Barrel Co.	" "	3,000
337	51	Western Sugar Refinery	" "	Test hole
338a-b	51	Golden Gate Yeast Company	" "	100,000
339	56	Sam'l Bloom & Sons Co.	Islais Creek—Noe Valley	15,000
339a	56	Sam'l Bloom & Sons Co.	" "	15,000
340	56	Eagle Tanning Company	" "	40,000
341	56	Eagle Tanning Company	" "	

INDEX OF GENERAL WELL DATA

SAN FRANCISCO COUNTY

Well No.	Page No.	NAME	District	Daily Yield Gals.
342	56	Mrs. Mary Grouther	Islais Creek—Noe Valley	8,000
343	56	Thos. McMann	" "	4,800
344	56	Poetsth & Peterson	" "	60,000
345	56	Western Bottling Company	" "	1,500
346	57	North Star Brewery	" "	12,000
347	54	Sunset Tanning Company	Islais Creek—So. Potrero & Butchertown	10,000
348	54	Knight Tanning Company	" "	4,000
349	54	Jones & Parkhurst	" "	800
350a-b	54	Krieg Tanning Company	" "	20,000 (2 wells)
351	51	J. G. James Company	" "	Abandoned
352	51	California Glue Works	" "	(4 wells) 160,000
352a	52	California Glue Works	" "	
353	52	California Glue Works	" "	
353a	52	California Glue Works	" "	
354a-b-c	52 52	A. B. Patrick Company	" "	60,000 3 wells
355	52	Miller & Lux Company	" "	100,000 5 wells
356a-b	52	Legallet-Hellwig Tanning Co.	" "	(4 wells) 130,000
357a-b	52	Legallet-Hellwig Tanning Co.	" "	
358	53	Wm. Taaffe (Butcher)	Islais Creek—So. Potrero & Butchertown	6,000
359	53	Don Biggs Co.	" "	2,400
360	53	Norton Tanning Company	" "	16,000
360a	53	Norton Tanning Company	" "	36,000
361	53	Miller & Lux Company	" "	(5 wells) 148,000
362	53	Roth & Blum Company	" "	36,000
363	53	S. S. F. Packing Company	" "	10,000
364	53	Bayle Lacoste Company	" "	1,300
365	53	California Tallow Works	" "	700
366	54	Robert Alexander	" "	Out of use
367	54	Mrs. Darcander	" "	400
368a-b	54	B. T. Olive	" "	(2 wells) 200
369	54	Carl S. Gidlison	" "	100
370	54	J. Smith	" "	100
371	60	Miller	Islais Creek—Mission Viaduct	50
372-3-4	60 60	F. Rosa	" "	(3 wells) 6,000
375	60	M. Pellissier	" "	3,000
376	60	Whitehurst	" "	300
377	60	St. Joseph's Orphanage (Spring)	" "	60,000
377a-b	60	(Spring) in street	" "	....
378	60	Jos. Porcari	" "	3,000
379	61	A. Strubel	" "	Out of use
380	61	Luigi Boitano	" "	1,000
381	61	Ferrari Bros	" "	5,000
382	61	G. H. Tuff	" "	Not in use
383	61	F. Carrara	" "	200
384	61	McHugh	" "	400
385	61	H. Moffat	" "	5,000
386	61	Gregoiri	" "	3,000
387	61	(No name given) spring	" "	600
388	62	A. Miller	" "	100
389	62	A. Peterson	" "	150
390	62	N. Peterson	" "	200
391	62	Mrs. Smith	" "	60 est.

INDEX OF GENERAL WELL DATA

SAN FRANCISCO COUNTY

Well No.	Page No.	NAME	District	Daily Yield Gals.
392	62	Viola Giovani	Islais Creek—Mission Viaduct	Out of use
393	62	Matten & Gebhard	" "	9,000
394	63	A. Metten	" "	7,000
395	63	Jacob Rissel	" "	2,000
396	63	Frank Junge	" "	300
397	63	Bianchi	" "	50
398	.....	(Number not used)		
399	63	G. Massera	" "	2,000
400	63	Pacific Hebrew Home	" "	2,000
401	62	C. H. Curtis	" "	200
402	62	G. Waara	" "	400
403	62	K. Lahti	" "	1,000
404	61	Robt. Marks	" "	300
405	61	Ed. Winans	" "	2,000
406	76	Lasaro Cotali	Bay View	20,000
407	76	B. Goldstein	" "	200
408	76	Menjus	" "	Temp. out of use
409	76	(No name given)	" "	20 Temp. out of use
410	76	S. Toviska	" "	100
411	76	E. H. Stowe	" "	20
412	76	F. Downs	" "	40
413	76	Lick Old Ladies Home	" "	10,000
414	76	Leon Winart	" "	3,000
415	77	Sers & Rosse Company	" "	(2 wells) 10,000
416	77	Sers & Rosse Company	" "	
417	77	E. Muzio	" "	150
418	78	Ferrari Bros	" "	5,000
419	78	California Evergreen Co	" "	8,000
420	77	L. Ciapali	" "	2,000
421	77	Jno. Pfenninger	" "	1,000
422	77	L. Ciapali	" "	2,000
423	.....	(Number not used)		
424	77	Lick Old Ladies Home	" "	5,000
425	77	Belua	" "	8,000 (2 wells)
426	77	G. Pardini	" "	
427	77	Belua	" "	400
428	77	J. D. Ohlroggen	" "	40
429	77	P. Jarmakoosky	" "	40
430	78	Geo. Cafferata	" "	100
431	78	Stagnaro	" "	1,000
432	78	Arata	" "	800
433	78	G. B. Passalacqua	" "	1,000
434	78	Rossi Co	" "	400
435	78	N. Schaefer	" "	1,000
436	78	A. Boiteno	" "	30,000
437	78	Sanesse	" "	2,000
438	78	L. Serrato	" "	300
439a-b	79	John Batis	" "	(2 wells) 60,000
440	79	Louis Feragiro	" "	(2 wells) 50,000
441	79	Louis Feragiro	" "	
442	79	L. Gerato	" "	(3 wells) 50,000
443	79	L. Gerato	" "	
444	79	L. Gerato	" "	
445	79	Mrs. Garbarino	" "	(3 wells) 30,000
446	79	Mrs. Garbarino	" "	
447	79	Mrs. Garbarino	" "	
448	79	M. Garbarino	" "	500

INDEX OF GENERAL WELL DATA

SAN FRANCISCO COUNTY

Well No.	Page No.	NAME	District	Daily Yield Gals.
449	79	Thompson	Bay View	(3 wells) 20,000
450	79	Thompson	" "	
451	79	Thompson	" "	
452	80	T. G. Necco	" "	(2 wells) 25,000
453	80	T. G. Necco	" "	
454	80	S. Logetani	" "	(2 wells) 20,000
455	80	S. Logetani	" "	
456	80	T. G. Necco	" "	(2 wells) 25,000
457	80	T. G. Necco	" "	
458	80	S. Logetani	" "	10,000
459	80	Schwaller	" "	Out of use
460	80	Mrs. Forman	" "	100
461	80	Catherine Tannin	" "	100
462	80	L. Jaquot	" "	100
463	80	J. M. Bourda	" "	1,000
464	81	Mrs. Chicino	" "	1,000
465	81	Peter Bartolone	" "	(3 wells) 40,000
466	81	Peter Bartolone	" "	
467	81	Peter Bartolone	" "	
468	81	C. Scheikert	" "	1,000
469	81	C. Ney	" "	1,000
470	81	C. N. Searle	" "	2,000
471	81	C. Engel	" "	300
471a-b	82	Marin Andrea	" "	(2 wells) 600
472	82	Emil Richards	" "	250
473	82	Geo. W. Coffey	" "	100
474	82	Chas. Migeot	" "	120
475	82	Western Tallow Co	" "	Out of use
476	82	Mary Lacoste	" "	100
477	82	G. B. Finocchio	" "	(3 wells) 5,000
478	82	G. B. Finocchio	" "	
479	82	G. B. Finocchio	" "	
480	82	Wm. Taaffe	" "	20,000
481	82	Mary Suttich	" "	1,500
482	82	(No name given)	" "	No information
483	81	Visitacion Water Co	" "	Out of use
484	57	West	Islais Creek—Noe Valley	300
485	63	Taaffe	Islais Creek—Mission Viaduct	Abandoned
486	63	Catherine Gitner	" "	250
487	63	Jerome	" "	Abandoned
488	63	G. Risso	" "	2,000
489	64	G. Risso	" "	5,000
490	64	(Spring)	" "	500
491a-b -c & d	64	(No name given)	" "	2,000
492	74	De Paoli	Islais Creek—Excelsior and Ocean View	3,000
493	74	Cereghino	" "	200
494	68	Eagle Brewing Co	" "	4,000
495	68	(No name given)	" "	Neglected
496	68	(No name given)	" "	Neglected
497	68	Armenini	" "	30,000 (2 wells)
498	68	Armenini	" "	
499	68	Jim Varni	" "	Temporarily out of use
500	68	Jim Varni	" "	
501	68	Wm. Varni	" "	40,000 (2 wells)
501a	68	Wm. Varni	" "	

INDEX OF GENERAL WELL DATA

SAN FRANCISCO COUNTY

Well No.	Page No.	NAME	District	Daily Yield Gals.
502	64	Pacific Hebrew Home	Islais Creek—Mission Viaduct.	Very little water
503	74	City	Islais Creek—Sunnyside	32,000
504	69	Pachetti's Nursery	Islais Creek—Excelsior and Ocean View	No pump
505	69	Capt. Smith	" "	200
506	69	McNulty	" "	....
507	69	Perrari	" "	15,000
508	69	H. Plath	" "	(4 wells) 3,000
509	69	H. Plath	" "	
510	69	H. Plath	" "	
511	69	H. Plath	" "	
512	70	N. P. Garassino	Islais Creek—Excelsior & Ocean	A sump-2 wells 140,000
513	70	N. P. Garassino		
513a	70	N. P. Garassino	" "	
514	70	Giovanni's Nursery	" "	8,000
515	70	Diego	" "	3,000
516	70	A. Doerr	" "	3,000
517	71	Joe Linehan	" "	200
518	71	F. Grieber	" "	500
519	71	T. Timka	" "	700
520 521	...	(Numbers not used)		
522	71	C. C. Smith	" "	500
523	71	P. T. Wolf	" "	500
524	71	N. Roberst	" "	250
525	71	P. J. Kremer	" "	60
526	71	C. H. Tubbs	" "	20
527	71	C. Kempler	" "	200
528	71	S. Bassler	" "	200
529	71	W. Moran	" "	5,000
530	72	W. Brown	" "	100
531	62	R. Enszlin	Islais Creek—Mission Viaduct.	50
532	62	Eshenhorst	" "	20
533	66	A. T. P. Schneider	Islais Creek—Sunnyside	100
534	66	Mr. Menchen	" "	400
535	66	F. Kennedy	" "	50
536	66	Mary Barber	" "	50
537	66	C. Johnson	" "	30
538	66	(Spring) Owner Mastra	" "	10
538a	66	Mastra	" "	500
539	66	M. Stammer	" "	50
540	64	John Honold	Islais Creek—Mission Viaduct.	Out of use
541	28	St. Francis Hospital	Mission Creek—City Hall	Little seepage water
542	39	Spreckels (2 wells)	Mission Creek—Eureka Valley	19,000
543	39	Spreckels	" "	1,000
544	40	Anchor Brewery	" "	8,000
545	101	U. S. Government	Lobos Creek	Test well
546	57	St. Luke's Hospital	Islais Creek—Noe Valley	Not yet installed
547	57	St. Luke's Hospital	" "	Not in use
548	57	Mission Garage	" "	1,200
549	57	Hecht Bros.	" "	6,500

INDEX OF GENERAL WELL DATA

SAN FRANCISCO COUNTY

Well No.	Page No.	NAME	District	Daily Yield Gals.
550	31	Jefferson Sq. Hall	Mission Creek—Hayes Valley	Temp. out of use
551 to 566 incl.		(Numbers not used)		
567	95	Lagomarsino	Lake Merced and Sunset	Not in use
568	95	Arata (Tenant Sutro Estate)	" "	2,000
569	95	Arata (Tenant Sutro Estate)	" "	
570	95	Arata (Tenant Sutro Estate)	" "	500
571	74	(Spring not flowing)	Islais Creek—Excelsior & Ocean View	No pump
572	51	H. R. Moffatt	Islais Creek—So. Potrero & Butchertown	No information
573	58	Mrs. Addie Poole	Islais Creek—Noe Valley	None
574	70	F. Isola	Islais Creek—Excelsior and Ocean View	75,000 (4 wells)
575	70	F. Isola		
576	70	F. Isola		
577	70	F. Isola	" "	
578	70	Crocker Estate Company	" "	10,000 (3 wells)
579	70	Crocker Estate Company	" "	
580	70	Crocker Estate Company	" "	
581	79	F. Brusco	Bay View District	30,000 (2 wells)
582	79	F. Brusco	" "	
583	81	Terio Giaro	" "	30,000 (2 wells)
584	81	Terio Giaro	" "	
585	95	Sutro Estate	Lake Merced and Sunset	25,000
586	95	J. Varni	" "	1,000
587	72	Ferrula	Islais Creek—Excelsior & Ocean View	300
588	72	(No name given)	" "	0
589	72	G. Cavagnaro	" "	1,000
590	72	S. Bottini	" "	30,000
591	72	P. Arata	" "	2,000
592	72	Jos. Capurro	" "	200
593	72	Gianbruno	" "	1,000
594	72	Mrs. Capurro	" "	2,000
595	73	L. Renner	" "	2,000
596	73	S. Bottini	" "	60,000 (2 wells)
597	73	S. Bottini	" "	
598	73	S. Bottini	" "	Temp. out of use
599	73	Marengo	" "	400
600	73	Armenini	" "	30,000
601	74	A. Tiscornia	" "	75,000 (2 wells)
602	74	A. Tiscornia	" "	
603	74	G. Varni	" "	50,000 (2 wells)
604	74	G. Varni	" "	
605	58	Watson Towel Supply Co.	" "	Temp. out of use
606	58	Watson Towel Supply Co.	" "	5,000
607	94	City & Suburban Inv. Co.	Lake Merced and Sunset	30,000
608	94	Vista Grand Water Co	" "	Auxiliary well—no pump
609	94	Vista Grand Water Co	" "	75,000
610	99A	National Cemetery—Presidio	Lobos Creek	10,000
611	99A	Relief Home Tract	" "	
612	74	Martin Kelly	Excelsior & Ocean View	500
613	47	Exposition Grounds	Harbor View	See page 172

Summary of Waters Drawn from the Underground Water Supply of San Francisco County, Including a Few Wells Just Beyond the County Line in Visitacion Valley and at the Head of Islais Creek

Total Number of Wells, Springs and Test Holes	683
Total Number of Wells and Springs now in use	508

TOTAL AMOUNT OF WATER NOW DRAWN FROM THE UNDERGROUND SOURCES IS ABOUT 8,500,000 GALLONS PER DAY

MISSION CREEK DISTRICT:		
Ferry Building Vicinity	610,500	
City Hall Vicinity	1,171,800	
Hayes Valley Vicinity	719,700	
Park Panhandle Vicinity	47,200	
Eureka Valley Vicinity	785,800	
North Potrero Vicinity	22,750	
		3,357,750
HARBOR VIEW DISTRICT		91,500
NORTH BEACH DISTRICT		31,500
ISLAIS CREEK DISTRICT:		
South Potrero and Butchertown Vicinity	855,700	
Noe Valley Vicinity	185,300	
Mission Viaduct Vicinity	124,130	
Sunnyside Vicinity	1,190	
Excelsior and Ocean View Vicinity	707,730	
		1,874,050
BAY VIEW DISTRICT		537,480
VISITACION VALLEY DISTRICT		294.300
LAKE MERCED AND SUNSET DISTRICT (Golden Gate Park Dutch Windmills 137,000)—Total		457,795
LOBOS CREEK DISTRICT (Park Water Works 577,000) Total		766.436
Total		7,410,811
War Department from Lobos Creek		1.100,000
		8.510.810

Mission Creek District

FERRY BUILDING VICINITY

Present yield 610,500 gallons per day from 29 wells, or an average yield per well of over 21,000 gallons daily.

3	Test Holes
7	Wells not in use
29	Wells in use
39	Wells and Test holes

Well Record.

MISSION CREEK DISTRICT—FERRY BUILDING VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
Sansome St., W. side, bet. Lombard & Greenwich Sts.	Merchants Ice & Cold Storage Co.	179	−8′	6″	480′	Overflows	3″x36″	35,000
Market and California Sts.	Hansford Bldg.	307	0′	12″	70′	30′	5″x30″	25,000
Market and California Sts.	Hansford Bldg.	307-A	0′	12″	70′	30′	5″x30″	25,000
Sansome St., E. side bet. Washington and Jackson Sts.	U. S. Custom House	180	−9′	10″	87½′	28′	5″x18″	20,000
Washington St., S. side bet. Sansome and Montgomery Sts.	Western Fish Co.	181	−5′	12″	105′	30′	4¼″x12″	25,000
Clay St., N. side, bet. Sansome and Montgomery Sts.	American Fish Co.	182	5′	12″	103′	....	4¼″x12″	10,000
Clay St., N. side, bet. Montgomery and Sansome Sts.	A. Paladini	183	−3′	16″	136′	12–15′ ?	....	10,000
California and Sansome Sts.	Alaska Commercial Bld.	184	−7′	14″	160′	50′ ?	3½″x10″	9,000
California St., S. side, bet. Montgomery and Sansome Sts.	Merchants Exchange Building	185	−5′	12″	138′	20′	4″x24″	26,000
S. E. Cor. California and Leidesdorff Sts.	Insurance Exchange Building	185-A	−5′	12″	150′	....	No pump as yet	....
N. E. Cor. California and Montgomery Sts.	Kohl Building	186	0′	10″	117′	34′	3″x14″	7,000

WELL RECORD

MISSION CREEK DISTRICT—FERRY BUILDING VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
California St., S. side, bet. Montgomery and Kearny Sts.......	California Market......	187	17′	14″.	78′	30′	4¾″x12″	32,000
Montgomery St., E. side, bet. Bush and Pine Sts............	Mills Building.........	188	5′	15″	146′	15′	5″x24″	....
N. W. Cor. Bush and Sansome Sts.	Standard Oil Bldg.....	306	3′	14″	139′	25′	Not yet in use	
Sutter St., N. side, bet. Sansome and Montgomery Sts..........	Holbrook Bldg........	189	6′	14″	138′	....	4½″x12″	Not yet in use
First St., W. side, bet. Market and Mission Sts.................	Langley & Michaels ...	174	–5′	12″	70′	28′	2¼″x6″	1 ,000
200′ S. W. of First St., 150′ S. E. of Tehama St................	American Forge Co....	174-A	15′	6″	70′	60′	4″x6″D.	10,000
Natoma St., S. E. side, 200′ S. W. of Montgomery...............	Underwriter's Fire Patrol..............	172-A	6′	6″	60′	10′ ?	3″x5″	1,500
N. E. Cor. Second and Mission Sts.	Wells Fargo Bldg......	176	3′	24″	180′	30′	4¾″x18″	5,000
S. E. Cor Second and Market Sts.	Balboa Bldg..........	176-A	20′	16″ S 12″ I	60′ 179′	125′ ?	5″x16″	35,000
S. E. Cor. New Montgomery and Mission Sts.................	Rialto Bldg...........	173	–10′	16″ S 12″ I	680′	....	Test Hole	....
S. E. Cor. New Montgomery and Mission Sts.................	Rialto Bldg...........	173-A	–10′	10″	80′	20′	8″x36″	25,000

WELL RECORD

MISSION CREEK DISTRICT—FERRY BUILDING VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
S. W. Cor. New Montgomery and Market Sts.	Palace Hotel	177	0′	14″	220′	90′ ?	Airlift	60,000
S. W. Cor. New Montgomery and Market Sts.	Palace Hotel	177-A	0′	14″	220′	90′ ?	Airlift	Not used
S. E. Cor. Sutter and Kearny Sts.	Sutter Hotel	190	-14′	8″	180′	30′	4¼″x24″	10,000
S. W. Cor. Market and Post Sts.	Crocker Bank Bldg.	191	-12′	16″	185′	40′	4″x18″	25,000
Kearny and Market Sts.	Chronicle Bldg.	192	25′	16″	187′	60′-80′	Airlift 3″	30,000
S. W. Cor. Union Square Ave. and Kearny St.	Levi Strauss	193	20′	14″	142′	....	4″x10″	3,000
S. W. Cor. Market and Geary Sts.	Mutual Savings Bk. Bld.	194	18′	16″	110′	50′	6″x18″	25,000
S. E. Cor. Third and Market Sts.	Hearst Bldg.	195	24′	7″	170′	25′ ?	6″x18″	25,000
Market St., S. side, bet. 3rd and Annie Sts.	Monadnock Bldg.	175	26′	14″	145′	45′ ?	5″x36″	20,000
N. W. Cor. Stevenson and 3rd Sts.	Municipal Light & Power Co.	171	12′	18″	180′	70′	7″x24″	84,000
N. W. Cor. Stevenson and 3rd Sts.	Municipal Light & Power Co.	171-A	12′	14″	180′	70′	7″x16″	8,000
N. W. Cor. Mission and 3rd Sts.	Aronson Bldg.	172	7′	12″	210′	20′ ?	6″x12″	3,000
Market St., S. side, bet. 3rd and 4th Sts.	Humboldt Bank Bldg.	170	15′	10″	200′	100′?	4″x12″	16,000

WELL RECORD

MISSION CREEK DISTRICT—FERRY BUILDING VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
Stockton St., E. side 75′ N. of Sutter..........................	L. H. Sly.............	249-B	90′	No water found in test hole.				
Sacramento St., S. side, 125′ E. of Mason......................	Fairmont Hotel.......	252	250′	10″	300′	"Test hole, no water."		
S. W. Cor. Pine and Mason Sts...	Old Bella Vista Hotel..	251	Was a very good well—now abandoned.					
Post St., N. Side, bet. Montgomery and Kearny Sts..............	Foxcroft Bldg.........	191-A	32′	22″ 18″	130′	Well abandoned about 1910 on account of trouble from quicksand.		
Mission St. Wharf..............	In driving four test piles at Mission Wharf, an Artesian belt of fresh water was probably encountered, as evidenced by the discharge from the test holes when the test pile was withdrawn. Analysis of a sample taken by a diver, however, showed about 75 per cent of salt water. In one instance, the water spurted four feet over the surface of the Bay for a minute or so and then subsided. At about 6 weeks after the date of driving the test piles, the surface of the Bay water still showed an eddy about four feet in diameter and some gas was rising in it.							

Mission Creek District.

CITY HALL VICINITY

Present yield 1,171,800 gallons per day from 27 wells or an average yield per well of over 43,000 gallons daily. Eight of the largest wells give a yield of 659,000 gallons per day or an average yield per well of over 85,000 gallons per day.

1 Test Hole
13 Wells not in use
27 Wells in use

41 Wells and Test Holes

Well Record

MISSION CREEK DISTRICT—CITY HALL VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
Market St., N. Side, bet. Grant Ave. and Stockton St.	Phelan Bldg.	196	–8′	16″	205′	40′	6″x20″	10,000
Geary St., S. side, bet. Grant Ave. Stockton St.	Whitney Bldg.	197	–20′	12″	40′	35′	8″x4″	35,000
S. W. Cor. Stockton and Geary Sts.	Butler Bldg.	198	32′	16″	168′	30′	6″x12″	15,000
N. W. Cor. Stockton and Post Sts.	Union Square Hotel.	304	52′	14″ S 12″ I	78′	....	....	Out of use
Jessie St., N. side, 200′ W. of 4th St.	Society of California Pioneers.	265	20′	16″ S 12″ I	201′	24′	5″x12″ Steam	18,000
S. W. Cor. Market and Fourth Sts.	Pacific Bldg.	169	20′	16″ S 12″ I	185′	28′	3¾″x12″	11,000
N. E. Cor. Powell and Market Sts.	Flood Bldg.	199	26′	16″	190′	45′	6″x18″	30,000
Mason St., W. side, bet. Eddy and Ellis Sts.	Poodle Dog Hotel.	200	28′	12″	180′	36′	6″x24″	8,000
S. W. Cor. Geary and Taylor Sts.	Bellevue Hotel.	201	68′	12″	187′	82′ ?	4½″x16″	40,000
S. W. Cor. Bush and Leavenworth Sts.	L. H. Sly.	249-A	210′	(No water found in test hole bored before 1906.)				
Sutter St., N. side, 150′ W. of Hyde St.	Granada Hotel.	245	150′	16″	65′	(Discontinued boring on account of rock. No great amount of water so pump never installed.		

WELL RECORD

MISSION CREEK DISTRICT—CITY HALL VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
California St., S. side, 100′ W. of Hyde St.	California St. Cable R. R. Power House	250	210′	(This well abandoned about 1903 on account of the scaling of the boilers. Water used only for boilers.)				
Polk St., W. side, 140′ N. of Sacramento	St. John Apartments	253	170′	16″ S 12″ I	80′	45′	5″x12″S.	Temp. out of use.
California St., S. side, 111′ E. of Polk St.	Mme. Lacoume	248	155′	12″	136′	38′	3¾″x7″D.	5,000
Pine St., S. side, 150′ E. of Polk St.	Nougue & Ceymot	247	154′	16″ S 12″ I	125′	32′	3″x10″S	6,000
Larkin St., W. side, half way bet. Bush and Austin Sts.	Lurline Baths	246	139′	12″	150′	42′ constant	5¾″x24″ Steam	15,000
N. E. Cor. Post and Polk Sts.	L. H. Sly	244	117′	14″ S 10″ I	172′	....	4″x16″	Temp. out of use.
N. W. Cor. Golden Gate Ave. and Leavenworth St. 6 wells	Y. M. C. A. Bldg.	203	35′	16″ Av.	30′	20′	2-surface Horiz. Duplex 8″x4″x12″ 8″x5″x12″	50,000
Golden Gate Ave., N. side, bet. Jones and Leavenworth Sts.	Knights of Columbus Bldg.	202	39′	12″	90′	40′	4″x7″	400
Jones and Market Sts. and Golden Gate Ave.	Prager's Dept. Store	204	23′	18″	100′	22′	6″x10″	5,400
Jones and McAllister Sts.	Hibernian Bank Bldg.	205	20′	12″	144′	40′ ?	7″x16″	10,000

WELL RECORD

MISSION CREEK DISTRICT—CITY HALL VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
Fifth and Market Sts.	Hale Bros.	168	24′	14″	185′	40′	6″x18″.	12,000
Ellis St., S. side, bet. Mason and Taylor Sts.	Hammam Baths.	264	50′	16″ S 12″ I	172½′	40′	4¾″x24″	10,000
Market St., S. side, 150′ E. of Sixth	Hale Bros. (old well)...	257	34′	16″ S 12″ I	201′	40′	No pump at present.	
Fifth St., S. side, bet. Market and Mission Sts.	U. S. Mint.	167	18′	14″	200′	38′	4″ Airlift	15,000
N. E. Cor. 7th and Market Sts...	Grant Bldg.	164	22′	14″	139′	20′	4″x6″D.	8,000
Mission and 7th Sts.	U. S. Postoffice.	165	29′	16″	130′	20′	4¼″x16″D.	26,000
Mission St., S. side, bet. 5th and 6th Sts.	California Casket Company.	166	18′	14″	214′	14′	7″x4″x8″	3,000
Sixth St., S. W. side, bet. Howard and Folsom Sts.	E. Rolkin.	166-A	8′	12″	191′	....	4″x7″	16,000
25′ S. E. Shipley, 100′ S. W. of Fourth St.	Jas. Buttgenbach.	266	5′	8″	150′	25′	4″x18″	7,000
Clementina St., W. side, bet. 4th and 5th.	Wardrobe Laundry....	267	5′	12″	115′	45′ Meas.	6″x18″	25,000
Bryant St., N. W. side, bet. 2nd and 3rd.	Fleischman-Clark.	163	0′	dug 5′ dia. brick lined	35′	(Out of use since 1906. Supplied water for boiler of Gundlach-Bundschen Wine Co. before earthquake. Water good.)		

WELL RECORD

MISSION CREEK DISTRICT—CITY HALL VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
Bryant St., N. W. side, bet. 4th and 5th	Overland Freight Transfer Co.	162	2′	10″	250′	20′	2½″x14″	5,000
S. E. Cor. 5th and Bryant St.	Pacific Pipe Tank Co.	160	0′	10″	220′	20′	5¾″x24″	25,000
Oak Grove Ave., W. side, bet. Harrison and Bryant	Marin County Milk Produce	256	1′	16″ 14″	158′	....	3″x8″	4,000
N. W. Cor. Bryant St., bet. 6th and 7th Sts., 2 wells	Rufino & Bianci	159	6′	10″	100′ 200′	(Abandoned and filled with rubbish. Were very good wells.)		
Langton St., N. E. side, bet. Bryant and Harrison Sts. 2 wells—both same	National Ice Co.	259-a 259-b	7′	24″ S 20″ I (2 wells alike)	210′	(Abandoned)		
Langton St., N. E. side, bet. Bryant and Harrison Sts.	National Ice Co.	259-c	7′	16″	220′	35′ ?	5″x20″	144,000
Brannan St., N. W. side, bet. 7th and 8th Sts.	McNab & Smith	260	3′	20″	186′	80′	Double action pump	25,000
Townsend St., N. W. side, bet. 7th and 8th Sts.	McGilvray Stone Co.	261	2′	12″	90′	15′ Meas.	5″x18″	20,000
Bryant St., N. W. side, bet. 7th and 8th Sts.	C. R. Splivalo Co.	158	9′	10″	190′	116′	5″ deep well pump	20,000

WELL RECORD

MISSION CREEK DISTRICT—CITY HALL VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
Eighth St., W. side, bet. Harrison and Bryant Sts.	Consumers Ice Co.	157	10′	12″	180′	90′	3″ Airlift	90,000
Eighth St., W. side, bet. Harrison and Bryant Sts.	Consumers Ice Co.	157-a 157-b	10′ 10′	18″ 14″	312′ 182′	Out of use.		
Harrison St., S. side, bet. 8th and 9th Sts.	California Bottling Co.	262	13′	9″	198′	170′ ?	3¾″x24″	10,000
Harrison St., N. side, bet. 7th and 8th Sts. 7 wells	Metropolitan Laundry Co.	156	10′	20″	200′	100′	4-4¼″x36″ 3-4¾″x36″	275,000
Eighth St., E. side, bet. Harrison and Bryant Sts.	Albany Brewery	155	10′	14″	190′	70′	4½″x24″	15,000
Eighth St., E. side, bet. Harrison and Folsom Sts.	Galland Laundry Co.	154-a 154-b 154-c 154-d	14′	20″ 20″ 18″ 12″	207′ 200′ 170′ 168′	....	5″x18″D. 5″x18″D. 6″x15″ 5″x16″	100,000
Eighth St., E. side, bet. Harrison and Folsom Sts.	White Star Laundry	153	15′	12″	220′	100′	4¼″x36″	28,000
Tehama St., N. side, bet. 9th and 8th Sts.	P. Noonan, Hibernian Brewery	263	30′	16″ 14″	260′	50–60′	6″x18″	30,000
N. E. Cor. Bush and Hyde Sts.	St. Francis Hospital	541	200′	6″	40′	Little seepage water.		

Mission Creek District

HAYES VALLEY VICINITY

Present yield 719,700 gallons per day from 29 wells, or an average yield per well of nearly 25,000 gallons per day. Three wells in La Grande Laundry yield 80,000 gallons per day.

14	Wells not in use
29	Wells in use
43	Wells

WELL RECORD

MISSION CREEK DISTRICT—HAYES VALLEY VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
Tenth St., W. side, bet. Bryant and Harrison Sts	Milwaukee Brewery	298	10′	6″ S 5″ I	301′	50′ Meas.	3¾″x12″	4–5,000
Eleventh St., W. side, bet. Folsom and Harrison Sts	California Wet Wash Laundry	300	13′	16″	145′	48′	5″x28″	7,000
S. E. Cor. 11th and Folsom Sts	Jackson Brewery Co	299	16′	24″ S 20″ I	208′	50′	6″x36″	25,000
Twelfth St., S. side, bet. Folsom and Howard Sts. 3 wells	La Grande Laundry	301 301-a 301-b	16′ 16′ 16′	20″ 20″ 16″	150′ 150′ 150′	50′ 50′ 50′	7″x18″ 5″x16″ 4½″x12″	80,000
Erie St., N. side, bet. Mission and Howard Sts	Atlas Laundry Co	126	14′	14″	158′	38′	4″x16″	15,000
Erie St., N. side, bet. Mission and Howard Sts	American Laundry Co	127	14′	20″	147′	16–60′	7″x18″	50,000
Valencia St., W. side, bet. Clinton Park and Brosnan	Levi Strauss & Co	123	30′	12″	75′	....	3″x12″	3,200
Hermann St., S. side, bet. Otis and Valencia Sts	Sanitary Laundry Co	125	30′	16″ 16″	95′ 95′	90′ ? 90′	5¼″x24″ 5″x16″	60,000
Valencia and Market Sts	U. R. R.	124	40′	12″	130′	35′	3″x18″	Well not used since 1906.
Twelfth St., S. side, bet. Mission and Howard Sts	L. & E. Emanuel	302	21′	12″	168′	66′	6″x24″	5,000

WELL RECORD

MISSION CREEK DISTRICT—HAYES VALLEY VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
Colton St., S. side, bet. Brady and Colusa Sts.	Eagle Laundry	303	40′	24″ 20″	135′	75′	5¾″x36″	45,000
Tenth St., E. side, bet. Mission and Howard Sts.	James Lick Baths	297	33′	18″ ?	230′	....	6⅜″x18″	30,000
Tenth St., E. side, bet. Mission and Market Sts. 2 wells	F. Thomas Dyeing & Cleaning	296 296-a	35′	8″ 12″	180′ 140′	50′ 60′	4½″x18″ 5¾″x24″	65,000
Civic Center Test Holes	City (Nos. 1–10) (Nos. 1–15)	293 294	Average Ground elev. 50′ Maximum depth of hole 122′.			Average depth to water 15′.		
160′ S. of Grove St., 125′ E. of Gough St.	Standard Shirt Factory	292	57′	10″	200′	15–45′ Av. 30′	4″x36″	12,000
50′ S. of Fulton St., 50′ E. of Webster St.	National Brewing Co.	289	80′	24″	140′	73′ ?	8″x14″	45,000
50′ N. of Fulton St., 150′ E. of Webster St.	National Brewing Co.	290	90′	16″	130′	....	6″x18″	40,00
100′ S. of McAllister, 200′ W. of Buchanan St.	Cerciat-Lace House French Laundry	291	86′	10″	182′	40′	5″x18″D.	57,000
S. E. Cor. Golden Gate Ave. and Octavia St.	Jefferson Sq. Hall	550	81′	12″	125′	(This well was good for about 6,000 gals. but the proprietors put on too large a pump and collapsed the casing.) (Temporarily out of use.)		
120′ N. Turk St., 150′ W. Fillmore —4 live wells—4 dead wells	S. F. Laundry Association	288	100′	24″ O 10″ I	Average 60′	12′	6″x5¼″x6″	72,000

WELL RECORD

MISSION CREEK DISTRICT—HAYES VALLEY VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
200′ W. Fillmore, 75′ S. Eddy St.	S. F. Laundry Association	287	96′	24″	110′	12′	4½″x2¾″x4″	500
50′ S. Eddy St., 100′ E. Steiner St.	S. F. Laundry Association	286	106′	24″ O 10″ I	91′	14½–15′ Meas.	6″x5¾″x6″	45,000
100′ W. Fillmore, S. line Eddy St.	California Baking Co	285	94′	10″	150′	10′	3″x24″S	14,400
About 50′ S. Eddy St., 200′ E. of Fillmore, under Chutes Theatre	Old Wieland's Brewery	284	100′	18″	120′	(Was a very good well—is now abandoned.)		
70′ N. Ellis St., 150′ W. Webster St	Lang Bros., under La Boheme Cafe	283	110′	16″	135′	10′	Steam Geared	Not in use–Abandoned in 1907.
100′ S. O'Farrell St., 200′ W. Webster St	Lang Bros	282	115′	16″	135′	10′	4¼″x24″	Temporarily out of use.
12′ W. of E. line Buchanan St., 135′ N. Geary St	Geary St. P. & O. R. R.	276	127′	12″	120′	(Abandoned about 1903 probably on account of scaling of boilers.)		
70′ S. Pine St., 100′ W. Fillmore	Paillassou	274	152′	10″	80′	42′-4″Meas. after pumping.	3″x14″D.	5,000
S. W. Cor. Scott and Sacramento Sts. 4 Test holes	Christian Science Church	271-A	1–190′ 2–174′ 3–170′ 4–187′					

WELL RECORD

MISSION CREEK DISTRICT—HAYES VALLEY VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
100′ N. Sacramento St., 100′ E. Broderick St.	Kelly—originally Brup-pacher	271	190′	....	....	....	Douglas-Surface	Out of use for 15 yrs.
60′ S. on Pine St., 200′ E. Scott St.	Old Peoples' Home	272	127′	14″	129′	Flows ½″ pipe full every night when pump stops.	3¼″x16″S. 26 RPM.	8,000
Middle of Block—Pine, Bush, Steiner and Pierce Sts.	St. Dominic	273	134′	4′x4′ brick lined to 8′–10″ casing.	102′	12½′ Meas.	Marsh 4″x8″	2,000
75′ W. Pierce St., 140′ N. Sutter St.	Cook Estate	275	134′	5′ dia. brick	18′	13′	No pump at present	Abandoned
125′ W. Broderick St., 140′ N. Post St.	Merced Dairy	277	147′	14″ S 12″ I	104′	14′ surface water 90′ good water	6″x12″D.	9,600
150′ W. on Scott St., 140′ N. Post St.	Mt. Zion Hospital	295	127′	14″	147′	Flowed 1912	Marsh 5¾″x24″	Not yet in use.
125′ S. Post St., 175′ W. Divisadero St.	Palace Laundry Co.	278	142′	16″ S 12″ I	160′	Struck water at 30′	Evans D.	25,000
50′ E. Divisadero St., 40′ N. O'Farrell St.	Anixter & Sons (Riverdale Creamery)	279	145′	16″ S 12″ I	99½′	30′ Meas.	5½″x24″S.	30,000
S. E. Cor. Scott & O'Farrell Sts.	Lang Bros.	280	132′	....	40′	20′	Well abandoned and filled.	
50′ E. Divisadero St., 100′ S. Ellis St.	J. Bedecarrat	281	155′	10″	103′	32′ 2″ Meas.	No pump at present.	

Mission Creek District

PARK PANHANDLE VICINITY

Present yield 47,200 gallons per day from 4 wells, or an average yield per well of nearly 12,000 gallons per day.

8 Wells not in use
4 Wells in use

12 Wells

WELL RECORD

MISSION CREEK DISTRICT—PARK PANHANDLE VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
W. side Masonic Ave., 200′ N. Turk St.	St. Mary's Hospital	105	271′	14″	149′	90′–125′ when pumping	4″x12″	16,000
Frederick St., near Willard (U. R. R. Dumps	Farnsworth	104 104-a	278′	(No pumps now) 10″	150′	(These 2 wells were very good producers—abandoned 15 years.)		
S. W. Cor. Stanyan and Clarendon Ave.	(Old Joost Water Wks.)	322-a	620′	....	....	....	....	200
50′ N. Palo Alto Ave., 150′ E. Stanyan St.	Munck	322	790′	Dug in rock	60′	55′	No pump (Well abandoned and filled in 1912 when house burned.)	
S. E. Cor. Hayes and Lyon Sts.	S. P. Hospital	269	216′	12″	125′	16′	Air lift	6,000
Middle of Block—Grove, Hayes, Scott and Divisadero Sts.	Pacific Hebrew Orphan Asylum	270	190′	(Two shallow wells to bedrock (about 70′) were attempted. There was no yield of water so they were abandoned.)				
N. E. Cor. Oak and Broderick,	U. R. R. Co.	106 106-a	194′	(Size and depth unknown. Two wells here are now temporarily abandoned. They gave a fair amount of water but quicksand caused a great deal of trouble.)				
E. side Castro, bet. Duboce and 14th Sts.	German Hospital	107-A 107-B	214′	14″ 14″	300′ 564′	Not much water—well abandoned. Not much water—well abandoned, tools kept sticking. Struck water, probably 8000 g. p. d. at about 300′.		
N. E. Cor. 14th and Castro	German Hospital	108	227′	20″	130′	110′	Deep well 7″x16″	25,000

Mission Creek District

EUREKA VALLEY VICINITY

Present yield 785,800 gallons per day from 42 wells, or an average yield per well of nearly 18,700 gallons per day.

23 Test Holes—Twin Peaks
42 Wells in use
——
65 Wells and Test Holes

WELL RECORD

MISSION CREEK DISTRICT—EUREKA VALLEY VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
N. E. Cor. Fillmore and Duboce Ave.	Hesthal-Duboce Apartments	109	104′	8″	42′	3 or 4′	Surface-triplex 4″x4″	Well not used now.
E. side Douglas St., bet. 17th and 18th Sts.	California Brewing Co.	110	184′	12″	100′	60′	5″x18″	9,000
E. side Diamond bet. 18th and 19th Sts.	Otto Luhn's Soap Wks.	111	145′	3′x3′ dug	43′	34′ Meas.	3½″x1½″	1,100
N. side 18th St., bet. Sanchez and Noe Sts.	Jaquemot	112	80′	16″	75′	10′5″	3″x6″	Supplied district after quake—Use temporarily discontinued.
N. E. Cor. Sanchez and Dorland Sts.	New Method Laundry	113-a 113-b 113-c	78′	8″ 20″ 12″	90′ 103′6″	60′ 60′	4½″x16″ 5¾″x36″ (Caved and was abandoned.)	70,000
18th St. bet. Church and Sanchez Sts. 4 wells	National Laundry	114-a 114-b 114-c 114-d	68′	16″ 20″ 16″ 16″	84 to rock 90 to rock 102′ 130′		well n. g. well n. g. 5″x17″ 4″x14″D.	filled filled 13,000 38,000
121 San Jose Ave., bet. 23rd and 24th Sts.	Townsend's	149	74′		Dug to 70′ Bored to 120′	27′	Surface 3″x6″	2,000
Valencia St., E. side, 200′ N. 22nd St.	City French Laundry	305	66′	10″	95′		3¾″x8″S. 40 rpm.	2,000

WELL RECORD

MISSION CREEK DISTRICT—EUREKA VALLEY VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
N. W. Cor. 19th and Guerrero Sts.	Atchison Mill Co......	115 115-A	44′ 44′	5′ 10″	17′ (Abandoned on account of quicksand.	14′ Meas.	6″x18″ Pump has to be run very slowly to avoid pumping well dry.	800
N. side 19th St. bet. Valencia and Guerrero Sts................	Dairy Delivery Co.....	116	40′	10″	150′	35′ to 70′?	Air lift	40,000
S. W. Cor. 16th and Guerrero Sts.	Standard Milk Co......	117	51′	12″	116′ now 85′	55′ in June, ’12. 20′ below normal	4¾″x24″	20,000
W. side Guerrero St., 150′ N. of 16th St.....................	National Ice Cream Co.	118	50′	12″	85′	Air lift into reservoir under floor, then centrifugal lift to tanks.		20,000
Dolores St., bet. 16th and 17th Sts.	College of Notre Dame..	119	60′	12″	119½′	....	4¼″x12″	20,000
N. W. Cor. 17th and Hoff Sts....	Home Laundry........	120	28′	20′	137′	28′	5¼″x18″	50,000
N. E. Cor. 16th and Valencia Sts.	Gartland Apartments..	121	31′	12″	121′	60′ ?	(Use of well discontinued on account of hardness. Supply was ample.)	
W. side Julian Ave., bet. 14th and 15th Sts....................	Sterling Laundry Co...	122	30′	14″	121′	28′	5″x8″	30,000 to 40,000
S. W. Howard and 14th Sts......	San Mateo Co. Dairy...	128	8′	12″	102′	14′	Surface 5″x8″	20,000
150′ W. Howard, 150′ S. 16th St..	Mission Hotel (J. W. Smith).............	129	15′	12″	140′	14′	Air lift	38,000 or more

WELL RECORD

MISSION CREEK DISTRICT—EUREKA VALLEY VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
Howard St., E. side, bet. 16th and 17th Sts.—100′ from 17th St. . .	Spreckels—2 wells.	542 543	14′ 14′	12″ 12″	185′ 185′	30′ 30′	6″x18″ 4″x6″	19,000 1,000
S. W. Cor. Shotwell and 18th Sts. .	Krug & Zimmerman Malting Co.	130	15′	7″	. . . .	Flows if pump stops 2 hours.	6″x4″x6″	60,000
W. side Shotwell St., 150′ N. of 19th St.	Old Homestead Bakery.	131	12′	10″	90′	15′	Surface 2″ Centrifugal Worthington 6″x4″x6″	15,000
W. side Folsom St., bet. 15th and 16th Sts.	Center.	132	7′	12″ 12″	154′ 154′	Meas. 24′ 5″ (2 wells deliver by gravity into well 36.4x25′ dia. pumped thence into tanks.	10″x14″	45,000
N. W. Cor. Folsom and 17th Sts. .	Golden Gate Steam Laundry.	133	13′	12″	145½′	32.15′ Meas.	(No pump installed. These lots abandoned as a laundry site probably on account of poor sewerage conditions.)	
W. side Folsom bet. 17th and 18th Sts.	Allec Cleaning & Dyeing Works.	134-a 134-b	11′	16″ 12″	150′ 150′	14′	6¼″x24″D. 4¼″x18″	25,000
S. W. Cor. 19th and Treat Ave. . .	Broadway Brewing Co. .	135	14′	20″	158′	30′	4½″x20″	14,400
W. Harrison St., bet. 19th and 20th Sts.	Tacoma Bottling Co. . .	136	15′	8″	132′	70′ ? when pumping	4″x24″S.	20,000

WELL RECORD

MISSION CREEK DISTRICT—EUREKA VALLEY VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
S. E. Cor. 19th and Harrison Sts. .	Crescent Feather Co. . .	137	12′	10″	167′	. . . .	8″x14″	2,000
N. E. Cor. 18th and Alabama Sts.	Fredericksburg Brewing Co.	138	60′	14″	135′ Now 40′	. . . .	6″x20″	(Pump removed, use of well discontinued on account of sand coming in.
N. E. Cor. 18th and Florida Sts. .	Union Brewing Co.	139	21′	16″	100′	47′	9¼″x30″	10,000
S. E. Cor. Bryant and 19th Sts. (2 wells).	Independent Laundry Co.	140-A 140-B	26′ 26′	14″ 20″	96′ 96′	40′ 40′	4¼″x16″D. 4¼″x16″D.	36,000 22,000
E. side of Bryant, bet. Mariposa and 18th Sts.	Bateman's Mill.	141	36′	14″	86′	58′	4¼″x24″	12,000
N. E. Cor. 22nd and Potrero Aves.	Sisters of Mercy.	334-A 334-B	49′ 49′	6′ dia. 12′ dia.	75′ 50′	40′ 30′ Meas.	Deep well 4″x6″ Garratt 4″x6″	4,000
S. E. Cor. 18th and Hampshire Sts.	Anchor Brewery.	544	32′	1″ pipe	Centrifugal pump			8,000
E. side Bryant St., near 18th. . . .	Aetna Laundry.	142-A	25′	12″	117′	72′	6″x24″ Marsh	3,000
		142-B	25′	12″	112′	72′ ?	5″x7″ Luitwiler	18,000
Harrison St., W. side, bet. 17th and 18th Sts.	City Street Imp. Co. . . .	143	11′	10″	101′	25′ or more	4″x10″S.	10,000

WELL RECORD

MISSION CREEK DISTRICT—EUREKA VALLEY VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
E. side of Folsom St., bet. 17th and 18th Sts.	H. Friedrichs	144	10′	8″	144′	25′	Gould 2″x 10″S. 44 rpm.	1,500
S. W. Cor. 16th and Division Sts.	Long's Syrup Refining Co.	145	11′	10″	60′	20′ to 50′	4″x24″	2,000
Folsom St., E. side, bet. Enterprise and 17th Sts.	Enterprise Brewing Co.	146	8′	24″ S 18″ I	108′	50′ ?	6″x18″	5,000
S. W. Cor. 15th and Harrison Sts.	American Steel & Wire Co.	147	8′	16″	94′	6′	2$\frac{3}{4}$″x16″	9,000
East line of Folsom St., 235′ S. of 15th St.	American Steel & Wire Co. (old well)	147-B	8′	12″	156′	(Now abandoned on account of quicksand.)		
Folsom St., bet. 14th and 15th Sts.	Illinois Pacific Glass Co.	148	8′	16″	117′	89′ ?	5″x24″D. 12 rpm.	60,000
Twin Peaks Tunnel Test Holes	(Nos. 1 to 23 inclusive, in this report numbered 23a to 23w incl., are a series of test holes along the line of the proposed Twin Peaks Tunnel, commencing at Valencia and McCoppin Sts., and extending to Danvers St.) (See logs Mission Creek District.) (Nos. 24 to 39 inclusive, in this report numbered 23 to 31—31a to 31g incl., extending from Twin Peaks to the westerly portal of the proposed Twin Peaks Tunnel.) (See logs Lobos District.)							

Mission Creek District

NORTH POTRERO VICINITY

Present yield 22,750 gallons per day from 3 wells, or an average yield per well of nearly 7,600 gallons per day.

2 Wells not in use
3 Wells in use
—
5 Wells

WELL RECORD

MISSION CREEK DISTRICT—NORTH POTRERO VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
Carolina St., E. side, bet. 15th and 16th Sts.	Stone Yard	327	4′	Abt. 12″	(Out of use, could not get more information.)			
N. E. Cor. 15th and Rhode Island Sts.	Sanitary Reduction Works	328	4′	10″	40′	5′ Meas.	$3\frac{1}{2}$″x16″	16,000
19th St., S. side, bet. Carolina and Wisconsin Sts.	L. H. Birth	329	74′	Concrete 4′ dia.	34′	15′	4″x$4\frac{1}{2}$″	750
S. E. Cor. Rhode Island and 17th St.	Fishbeck Soap Co.	330	16′	Brick 8′ dia.	35′	7′	8″x36″D.	6,000
S. E. Cor. Wisconsin and 16th St.	Union Ice Co.	331	11′	7″	....	12′ when bored	(No pump installed.)	

Harbor View District

Present yield 91,500 gallons per day from 12 wells, or an average yield per well of over 7,600 gallons per day.

11	Wells not in use
13	Wells in use
24	Wells

WELL RECORD

HARBOR VIEW DISTRICT

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
S. W. Cor. Van Ness Ave. and Clay St.	Estate of Claus Spreckels.	253-A	195′	16″ S 12″ I	141′	(Information about pump not obtainable.)		
50′ W. on Polk St., 100′ N. of Clay St.	Mme. Ferran, Mme. Plegat.	254	170′	12″	95′	25′	Clot & Crist 5″x8″ 60 rpm.	16,000
1732 Polk St., 120′ S. of Washington St.	Gassmann-Trouillet Laundry	255	190′	14″	140′	Abt. 30′	Clot & Crist 4″x12″S.	10,000
N. W. Cor. Jackson and Polk Sts.	Jerome Garage Co.	1	168′	16″ S 12″ I	110′	....	....	15,000
Broadway, N. side, 25′ W. of Larkin St.	Grand Garage, H. E. Bothin.	311	150′	10″	90′	22′ in Mar., 1912	Hill No. 12 4¼″x12″	10,000
150′ N. Green St., 150′ W. Polk St.	Atlas Garage.	312	117′	10″	60′	20′	Hill No. 12 4¼″x12″S.	7,000
Franklin St., W. side, bet. Green and Union	Burr.	2	80′	8″	30′	12′ 2″ Meas.	Surface 2½″x6″	5,000
Franklin St., W. side, bet. Union and Filbert Sts.	Burr (Demaria).	3	70′	6′x6′	10′	5′ to 10′	Surface 3″x5″	5,000
N. E. Cor. Franklin and Filbert Sts.	Burr (N. E. Van Ness and Filbert).	4	68′	12″	125′	15′	Deep well 3″x2½″	1,000
100′ S. Chestnut St., 150′ W. Van Ness Ave.	D. Garibaldi.	313	80′	6″	150′	60′	2″x6″	(Temporarily out of use.)

WELL RECORD

HARBOR VIEW DISTRICT

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
75′ N. of Greenwich St., 150′ E. of Gough St.	Chas. Abraham	314	45′	6′ dia. 2x6 redwood	45′	5′ 4″ Meas.	2½″x6″ surface	1,000
75′ S. of Lombard St., 120′ E. Gough St.	G. F. Norton	315	47′	Brick to 15′	55′	21′	3″x3″	500
Baker St., W. side, N. of Chestnut St.	Pacific Nursery Co.	5	0′	(Dug well on edge of lagoon—now abandoned.)				
Lombard and Scott Sts.	Wunder Brewery	6	3′	10″	25′	6′	6″x5″	....
N. side of Lombard St., bet. Fillmore and Steiner	Golden Gate Steam Laundry	7	24′	12″	150′	30′ (Well abandoned 11 years ago.)	5″x24″	(Pump taken out)
75′ N. Lombard St., bet. Fillmore and Steiner Sts.	Golden Gate Steam Laundry	8	24′	12″	227½′	16′4″ Meas.	(Pump not yet installed)	
N. Side Lombard, bet. Fillmore and Steiner Sts.	Golden Gate Steam Laundry	8-A	24′	12″	170′	....	....	....
S. Side Lombard St., bet. Scott and Devisadero Sts.	Mondial Liberty Bottling Works	9	11′	10″	42′	Abt. 25′ now ?	6″x3″x6″	1,000
E. side Fillmore, bet. Chestnut and Lombard Sts.	Golden Gate Distillery	10	22′	10″ to 8″	130′	10′ to 19′	Deep Well 3″x15″	20,000

WELL RECORD

HARBOR VIEW DISTRICT

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
N. side of Jefferson St., 200′ E. Broderick	Fulton Iron Works	317	3′	8″	About 125′	....	Air lift	(Water was slightly brackish and the well was abandoned)
About Baker and Jefferson Sts.	Hermann-Harbor View Baths	318	3′	(Water was brackish and not potable.)				
About Beach and Broderick Sts.	Harbor View Baths	319	4′	(Flowing well. Water pretty fair. Abandoned about 1910.)				
Bet. Webster and Fillmore, Chestnut and Francisco Sts.	Pacific Gas & Electric Co., 3 wells	316	23′	12″	160′	(3 wells reported to have been very good producers but definite information lacking. Now out of use.)		
Exposition Grounds	P. P. I. E. Co.	613	17′	13½″	400′	5′	No pump.	

North Beach District

Present yield 31,500 gallons per day from 3 wells, or an average yield per well of 10,500 gallons per day.

1 Well not in use
3 Wells in use
—
4 Wells

WELL RECORD

NORTH BEACH DISTRICT

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
N. North Point St., bet. Larkin and Polk Sts.	D. Ghiradelli.	310	44′	16″	100′	60′	Hill 5¼″x16″	20,000
N. E. Cor. Taylor and Bay Sts.	Pacific Cereal Association.	309	3′	16″ 12″	116′	18′	Marsh 4¼″x24″	0
S. side North Pt. St., bet. Taylor and Jones Sts.	Musto-Keenan Marble Works.	308	2′	12″	75′	18′	Amer. Deep Well 3¼″x24″	7,500
Powell St., bet. Greenwich and Filbert Sts.	North Pt. Lndry. Assn.	152	45′	6″	275′	200′	Air lift	4,000

Islais Creek District

SOUTH POTRERO AND BUTCHERTOWN VICINITY

Present yield 855,700 gallons per day from 37 wells, or an average yield per well of over 23,000 gallons per day.

The principal yield from this vicinity is obtained from the following wells:

160,000 gallons per day from 4 wells of the California Glue Works
60,000 gallons per day from 3 wells of A. B. Patrick
100,000 gallons per day from 5 wells of Miller and Lux
130,000 gallons per day from 4 wells of Legallet-Hellwig Tanning Company
148,000 gallons per day from 5 wells of Miller and Lux

598,000 gallons per day from 21 wells, or an average yield per well of 28,500 gallons per day.

1	Test Hole
3	Wells not in use
37	Wells in use
41	Wells

WELL RECORD

ISLAIS CREEK DISTRICT—SOUTH POTRERO AND BUTCHERTOWN VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
S. E. Cor. Humboldt and Louisiana Sts.	Western Sugar Refinery	337	15′	....	500′	....	....	Test hole
S. side 22nd St., bet. Illinois and Michigan Sts.	California Barrel Co.	336	26′	Wooden 4′x8′	20′	10′	Dowe D. W 3¼″x4″	3,000
E. Side Indiana St., bet. 22nd and 23rd Sts.	Tubbs Cordage Company	335	18′	19′ Dia.	28′	15′	Duplex 3¾″x4″ Hooker 6″x12″	8,000 Emerg.
W. Side Minnesota St., bet. 23rd and 25th Sts.	Golden Gate Yeast Co.	338-A 338-B	16′	14″ 12″	80′ 60′	16′ 16′	Hill 5″x18″ Luitwiler 4½″x14″	100,000
W. side Arkansas St., bet. 20th and 22nd Sts.	A. Raymond	333	220′	Concrete 4′x4′	50′	24′	Deep Well 3″x8″	2,500
W. Side Connecticut, bet. 19th and 20th Sts.	Howse	332	175′	Wooden 4½′ Octagon	30′	17′	Surface 4″x5″	200
Arthur and Railroad Aves.	J. G. James Co.	351	0′	6″	90′	(Well abandoned.)		
Butchertown, 1st Ave., 300′ from R. R. Ave.	H. H. Moffatt	572	0′	16″ 12″	(Well cannot now be located. Data shown here was obtained from Haley's Records.)			
N. side Rankin, bet. Fairfax Ave. and Evans Ave., middle of block.	California Glue Works.	352	0′	14″	150′	60′	Garratt 4″x18″	(Combined capacity of 4 wells given in 352-A.)

WELL RECORD

ISLAIS CREEK DISTRICT—SOUTH POTRERO AND BUTCHERTOWN VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
N. W. Cor. Rankin and Fairfax Aves.	California Glue Works.	352-A	0′	14″	185′	60′	Garratt 5″x18″	160,000 Combined capacity of 4 wells—352, 352-A, 353, 353-A
S. Rankin St., bet. Fairfax and Evans Aves.	California Glue Works.	353 353-A	0′	12″ 12″	135′ 145′	60′ 60′	Marsh 5″x18″ Garratt 4″x18″	(See above)
N. E. side of Fairfax, bet. Quint and Rankin.	A.B. Patrick Co., 3 wells	354-A 354-B 354-C	1′	10″ 10″ 10″	200′ 200′ 100′	About 25′ each	Dowe 5″x16″ Garratt 4″x18″ Garratt 4″x14″	60,000 for 3 wells.
Evans and Davidson Sts., bet. Quint and Phelps.	Miller & Lux Co., 5 wells —all similar.	355	0′	12″	110′	60′	Luitwiler D. duplex 5″x30″	100,000 for 5 wells.
N. Fairfax, bet. Phelps and Quint Sts.	Legallet-Hellwig Tanning Company.	356-A	1′	24″ S 20″ I 14″ I	95′	40′	Dorward D. 5″x16″	
" "	" "	356-B	1′	14″	95′	40′	Dorward D 4½″x18″	130,000
" "	" "	357-A	1′	14″	95′	40′	Single 5¾″x24″	
" "	" "	357-B	1′	14″	95′	40′	Single 5″x18″	

WELL RECORD

ISLAIS CREEK DISTRICT—SOUTH POTRERO AND BUTCHERTOWN VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
N. E. Cor. Evans and Railroad Ave.	Wm. Taaffe, Butcher	358	2′	16″ S 12″ I	100′	16′	Hill—deep well 4½″x12″	6,000
N. side Evans Ave., bet. Railroad Ave. and Newhall St.	Don Biggs Co.	359	3′	16″ S 12″ I	100′	14′	Hill pump 4″x8″	2,400
S. side Jerrold Ave., bet. Quint and Phelps Sts.	Morton Tanning Co.	360	5′	Concrete 8′ dia.	38′	21′	Thomson-Evans 4″x18″	16,000
S. side Jerrold Ave., bet. Quint and Phelps Sts.	Morton Tanning Co.	360-A	5′	Concrete 10′	72′	33′	Handmade 14″x5″x14″	36,000
Newcomb, McKinnon, Quint and Phelps.	Miller & Lux Company, 5 wells	361	20′	12″	120′	70′	Luitwiler 4″x30″	148,000 for 5 wells
South Cor. Newhall and Fairfax	Roth & Blum Co	362	6′	20″	91′	58′	Dorward 6″x24″	36,000
N. side Mendell St., bet. Fairfax and Galvez Aves.	S. S. F. Packing Co.	363	12′	24″ S 20″ I	84′	32′	Hill 5″x12″	10,000
Davidson Ave., bet. Mendell and Lane Sts.	Bayle Lacoste Co., 2 wells	364	4′	Wooden 6′	75′ 75′	15′ 15′	Both Worthington surface 4½″x3¾″	1,300
S. side Evans Ave., bet. Lane and Keith Sts Sts.	Calif. Tallow Works	365	22′	No casing, in rock	280′	277′	Worthington 2½″x7″	700

WELL RECORD

ISLAIS CREEK DISTRICT—SOUTH POTRERO AND BUTCHERTOWN VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
Keith St., bet. Evans and Fairfax Aves.	Robert Alexander	366	23′	Wooden	80′	10′	Hand 2″x6″	(Out of use except in emergencies.)
Keith St., bet. Galvez and Hudson Aves.	Mrs. Darcander	367	60′	Wooden	30′	12′	Surface 2″x6″	400
N. side Innes, bet. Keith and Jennings	B. T. Olive	368-A 368-B	157′ 164′	Wooden 6′x3′ Wooden 4′x2.5′	40′ 50′	28½′ 21½′	Hand pump 2½″x6″	200 for 2 wells.
S. side Innes Ave., bet. Keith and Jennings Sts.	Carl S. Cidlison	369	85′	Concrete 4′ Dia.	14′	7′	2″x6″ Surface	100
N. side Jerrold, bet. Keith and Lane Sts.	J. Smith	370	170′	Wooden 4′x4′	33′	12′	2″x6″ Surface	100
East side San Bruno, bet. Army and Oakdale Ave.	Kreigh Tanning Co., 2 wells	350-A 350-B	0′ 0′	18″ 10″	75″ 25″	10′ 10′	3″x6″ Surface Air lift	20,000
S. E. Cor. Army and DeHaro Sts.	Jones & Parkhurst	349	23′	No casing	25′	20′	3″x12″ Surface	800
S. W. Cor. Army and Kansas Sts.	Knight Tanning Company	348	7′	Wooden 6′x6′	30′	26′	3″x10″ Surface	4,000
S. E. Cor. San Bruno Ave. and Army Sts.	Sunset Tanning Company	347	12′	12″S 10″ I	86′	15′	4″x12″ Deep Well	10,000

Islais Creek District

NOE VALLEY VICINITY

Present yield 185,300 gallons per day from 15 wells, or an average yield per well of 12,300 gallons per day. Five wells in this vicinity have a yield of 146,000 gallons per day or an average yield per well of 29,200 gallons per day.

4 Wells not in use
15 Wells in use
——
19 Wells

WELL RECORD

ISLAIS CREEK DISTRICT—NOE VALLEY VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
E. side Utah St., bet. 25th and 26th Sts.	Nagle Tanning Company	340	22′	Concrete 10′ dia.	60′	4′	Duplex $7''\text{x}4\frac{1}{2}''\text{x}7''$ Surface	40,000 for both wells.
" "	" "	341	22′	18″	60′	4′		
S. E. Cor. 25th and Potrero Ave.	Samuel Bloom & Sons Co.	339	29′	18″ S 10″ I	90′	10′	Fairbanks Morse Surface 6″x4″x6″ Duplex	15,000
N. Army, 300′ N. E. from Hampshire St.	Samuel Bloom & Sons Co.	339-A	5′	Wooden 6′ dia.	40′	10′	Fairbanks Morse Surface 6″x4″x6″ Duplex	15,000
N. E. Cor. York and 26th Sts.	Mrs. Mary Grouther.	342	21′	10″	120′	....	Dowe-deep well 6″x36″	8,000
S. W. Cor. 26th and York Sts	Thos. McMann.	343	21′	Wooden 5′x5′	15′	Flows over	Surface 3″x8″	4,800
N. E. Cor. Army and Harrison Sts.	Poetsth & Peterson	344	27′	14″	85′	Overflows	Snow Duplex Surface 6″x4″x6″	60,000
N. side of Army St., bet. Harrison and Folsom Sts.	Western Bottling Company.	345	28′	6″	104′	14′?	Rotary—Surface 3″x4″	1,500

WELL RECORD

ISLAIS CREEK DISTRICT—NOE VALLEY VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
N. side of Army St., bet. Mission and Shotwell Sts.	North Star Brewery	346	50′	18″	138′	10′	Worthington deep well 6″x36″	12,000
S. E. Cor. Valencia and 26th Sts.	Mission Garage	548	64′	10″	90′	....	Hull No. 12 4″x12″ Surface	1,200
S. W. Cor. Valencia and 26th Sts.	Hecht Bros.	549	64′	Brick 6′ dia.	40′	28′ to 33′	5″x7″ deep well	6,500
Army St., bet. Valencia and San Jose Ave.	St. Luke's Hospital	150	80′	6″	208′	27′	(Well not good—very little water.)	
E. side San Jose Ave., at 27th St.	St. Luke's Hospital	546	70′	12″ S 10″ I	200′	....	American 4″x8″ Not yet installed	....
N. E. Cor. Duncan and San Jose Ave.	St. Luke's Hospital	547	88′	14″	140′	....	Deep well 3″x14″ Sing	This well not used since 1906.
28th and Valencia Sts., Tiffany Ave. side	U. R. R. Co	151	59′	12″	125′	Flow 3″ stream	Thompson Evans Double Acting 3″x18″	16,000
S. W. Cor. Day and Dolores Sts.	West	484	105′	Brick lined 4′ dia.	45′	15′	Surface 1½″x6″	300

WELL RECORD

ISLAIS CREEK DISTRICT—NOE VALLEY VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
S. W. side Laidley St., bet. Harper and Fairmount Sts.	Mrs. Addie Poole.	573	320′	7′ dia.	110′	Over 50′	None	. . . .
80′ W. of Mission St., 220′ N. of 30th St.	Watson Towel Supply Co.	605	100′	Wooden 6′x6′	80′	. . . .	Hooker 6″x16″ Dbl.	(Temp. out of use.)
75′ W. side of Mission St., 200′ N. of 30th St.	Watson Towel Supply Co.	606	100′	Wooden 6′x6′	27′	19′ after pumping 2 hrs.	Surface 4″x6″ Single	5,000

Islais Creek District

MISSION VIADUCT VICINITY

Present yield 124,130 gallons per day from 46 wells and 4 springs, or an average yield per well of nearly 2,500 gallons per day. One spring gives a yield of 60,000 gallons per day.

7	Wells not in use
4	Springs in use
46	Wells in use
57	Wells and Springs

WELL RECORD

ISLAIS CREEK DISTRICT—MISSION VIADUCT VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
W. side of Nevada Ave., 150′ S. of Powhattan Ave.	Miller	371	130′	....	40′	20′	Surface 2″x6″	50
N. side of Cortland Ave., 50′ E. Nevada St.	F. Rosa	372	107′	15′x12′	50′	20′	Deep well 5″x18″	6,000
N. side of Cortland Ave., 50′ W. Nebraska St.	F. Rosa	374	57′	10′x12′	35′	10′	Surface 3″x6″	Included in No. 372.
N. side of Cortland Ave., 50′ E. Bradford St.	F. Rosa	373	112′	10′x12′	45′	23′	Surface 3″x6″	Included in No. 372.
S. side Cortland Ave., bet. Peralta and Bradford Sts.	M. Pellissier	375	50′	Wooden 6′ dia.	70′	16′	Hedge & Hall 3″x8″	3,000
E. of Prentiss, bet. Jarboe and Tompkins Sts.	Whitehurst	376	144′	Concrete 6′ dia.	22′	13½′	Fairbanks Morse-surface 2¼″x6″	300
N. side of Gaven St., bet. Barneveld Ave. and Merrill St.	St. Joseph's Orphanage	377	28′	Spring "	....	....	Dowe Duplex 10″x5″x10″ Double	60,000
On Boylston St. at N.side Rickard St.	In street	377-A 377-B	12′	Spring	(Water comes out at serpentine-terrace contact. This contact can be seen for several hundred feet along Islais Creek.)			
W. side San Bruno Ave., bet. Hale and Silver Ave.	Jos. Porcari	378	59′	10″	100′	20′	Deep well 3½″x6″	3,000 average

WELL RECORD

ISLAIS CREEK DISTRICT—MISSION VIADUCT VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
S. side of Silver Ave., bet. Charter Oak St. and Ledyard St.	A. Strubel	379	67′	Brick 4′	42′	35′	Deep well 3″x6″	Out of use.
S. W. Cor. Silver Ave. and Goettingen St.	Luigi Boitano	380	72′	8″	100′	40′	2½″x6″ Deep well	1,000 est.
N. W. Cor. Sillman and Somerset Sts.	Ferrari Bros.	381	93′	8″	83′	30′	Deep well 4″x8″	5,000
S. side Silliman St., bet. Somerset and Goettingen St.	G. H. Tuff	382	93′	Brick 4′ dia.	23′	22′	Not in use as yet.	
W. side Berlin St., bet. Silliman and Felton Sts.	F. Carrara	383	75′	Wooden 5′x5′	30′	25′	3″x6″	200
N. E. Cor. of Goettingen and Felton Sts.	McHugh	384	82′	10″	64′	20′	Deep well 2½″x5″	400
N. W. Cor. Holyoke and Felton Sts.	H. Moffat	385	97′	Wooden 6′x6′	85′	73′	Deep well 3″x4″	5,000
N. W. Cor. Felton and Colby Sts.	Gregoiri	386	149′	Wooden 6′ dia.	60′	45′	3½″x6″	3,000
N. W. Cor. Silliman and Oxford Sts.		387	256.3′	Spring	(This spring supplies about 50 head of mules.)			600
S. E. Cor. Cambridge and Silliman Sts.	Ed. Winans	405	230′	Wooden 6′x6′	32′	13′	4″x6″	2,000
S. W. Cor. Felton and Harvard Sts.	Robert Marks	404	315′	2″x6″				300

WELL RECORD

ISLAIS CREEK DISTRICT—MISSION VIADUCT VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
W. side Knox St., bet. Felton and Burrows Sts.	K. Lahti	403	400′	Deep well 4″x6″	36′	29′	Deep well 4″x6″	1,000
E. side Mansfield St., bet. Burrows and Felton Sts.	G. Waara	402	443′	Wooden 5′x5′	36′	30′	2″x10″	400
E. side Madison bet. Felton and Silliman Sts.	C. H. Curtis	401	340′	Wooden 4′x4′	28′	25′	Surface 2″x6″	200
E. side Athens St., bet. Madison and Peru Sts.	A. Miller	388	375′	Brick 4′x4′	45′	40′	Deep well 2″x6″	100
N. E. Cor. Peru and Athens Sts.	H. Eshenhorst	532	382′	10″	80′	78′	2½″x6″	20
W. side of Athens bet. Peru and Madison Sts.	R. Enszlin	531	360′	5′ dia.	70′	65′	2½″x6″	50
W. side of Athens, bet. Peru and Madison Sts.	A. Peterson	389	368′	4′ dia.	45′	35′	Douglas 2″x6″	150
E. side Naples, bet. Silver and Peru Sts.	N. Peterson	390	250′	4′x4′ Concrete	30′	14′	2″x8″ Surface	200
E. side Naples, bet. Silver Ave. and Peru.	Mrs. Smith	391	253′	3′ dia. Concrete	....	....	2″x6″	60 est.
E. side of Mission St., S. of Crescent Ave.	Viola Giovani	392	180′	Wooden 4′x4′	20′	3′	....	Out of use.
N. side of Trumbull, bet. Graut and Congdon Sts.	Matten & Gebhard	393	90′	10″	50′	20′	Hall Surface 4″x10″	9,000

WELL RECORD

ISLAIS CREEK DISTRICT—MISSION VIADUCT VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
N. E. Cor. of Ney and Congdon Sts.	A. Metten	394	120′	10″	70′	30′	Hall Surface 3½″x8″	7,000
S. side Maynard, bet. Graut and Congdon Sts.	Jacob Rissel	395	154′	Brick 4′ dia.	30′	17′	2″x12″	2,000
N. side Silver Ave., bet. Graut and Congdon Sts.	Frank Junge	396	187′	Concrete 4½′x4½′	25′	20′	Douglas 2″x6″ Surface	300
S. side of Silver Ave., bet. Lisbon and Madrid Sts.	Bianchi	397	185′	Wooden 5′ dia.	32′	30½′	Deep well 2″x6″	50
N. E. Cor. Silver Ave. and Mission St.	G. Massera	399	152′	10″	63′	25′	Deep well 3″x12″	2,000
S. E. Cor. of Mission St. and Silver Ave.	Pacific Hebrew Home	400	213′	Wooden 4′x4′	70′	34′	Deep well	2,000
S. Cor. Roanoke and Arlington Sts.	Taaffe	485	193′	Brick 4′ dia.	40′	5′	Surface 2″x6″	(Now abandoned.)
Rousseau, bet. Bosworth and Springdale Sts.	Catherine Citner	486	150′	3′ dia. brick	30′	....	1½″x6″ Surface	250
E. Cor. of Springdale and Lyell Sts.	Jerome	487	100′	(Abandoned since sewer was put in as this cut off supply.)				
50′ N. W. Ocean Shore track in Danton St.	G. Risso	488	92′	Spring 8″	8′	4′	Surface 6″x12″	2,000 aver. for year

WELL RECORD

ISLAIS CREEK DISTRICT—MISSION VIADUCT VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
110′ N. of Tingley St., 500′ W. of Mission St.	G. Risso	489	130′	16″	60′	25′	Deep well 5″x9″	5,000
Westerly Cor. Springdale and LaMartine	Spring	490	100′	....	....	....	Surface 2″x6″	500
Tingley St., W. from Mission St., 4 wells	....	491-a b c d	155′ 150′ 135′ 155′	(These wells are about 90′ deep to rock. Same as Risso's. They have small windmills and supply each probably 500 gallons per day for domestic use.)				2,000
N. side of Cotter St., bet. Mission and Alemany Ave.	Pacific Hebrew Home	502	164′	10″	60′	40′	3″x12″ Deep well	(Very little water)
N. side Bosworth St., bet. Diamond and San Jose Ave.	John Honold	540	160′	Wooden 9′x9′	20′	8½′	(Out of use.)	

Islais Creek District

SUNNYSIDE VICINITY

Present yield of 1,190 gallons per day from 8 wells, or an average yield per well of only about 150 gallons per day.

WELL RECORD

ISLAIS CREEK DISTRICT—SUNNYSIDE VICINITY

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
N. side Sunnyside Ave., bet. Baden and Congo Sts.	M. Stammer.	539	257′	Brick 5′ dia.	70′	64′	2½″x5″ Deep well	50
30th St. and Stanford Heights Ave.	Mastra.	538-a	600′	Spring	(No pump. Gravity feed to vegetable gardens.)			500
N. side 33rd St., bet. Stanford Heights Ave. and Kenyon Ave .	. . . .	538	460′	Spring	(Supplies 10 horses)			10
S. E. Cor. Foerster and 33rd Sts . . .	C. Johnson.	537	400′	Wooden 4′x4′	25′	13′	2½″x5″	30
E. side Foerster St., bet. 33rd St. and Melrose Ave	Mary Barber.	536	380′	Wooden 4′x4′	22′	10′	2½″x5″ Surface	50
E. side Foerster St. bet. 33rd St. and Melrose Aev.	F. Kennedy.	535	375′	Wooden 4′x4′	18′	10′	2½″x6″ Surface	50
S. E. Cor. Stanford Heights Ave. and 33rd St.	Mr. Menchen.	534	480′	Brick 5′x5′	16′	5′	2½″x6″ Surface	400
S. W. Cor. Foerster St. and Joost Ave.	A. T. P. Schneider.	533	332′	Wooden 4′x4′	70′	67′	Deep well 2½″x6″	100

Islais Creek District

EXCELSIOR AND OCEAN VIEW VICINITY

Present yield 707,730 gallons per day from 75 wells, or an average yield per well of over 7,000 gallons per day. Twenty-four wells of this number have a yield of 637,000 gallons per day, or an average yield per well of 26,500 gallons per day.

12 Wells not in use
76 Wells in use
—
88 Wells

WELL RECORD

ISLAIS CREEK DISTRICT—VICINITY OF EXCELSIOR AND OCEAN VIEW

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
S. W. Cor. Mission and Mohawk Sts.	Eagle Brewing Company	494	178′	10″	100′	12′ Constant	Hall D. W. Dbl. 4½″x20″	4,000
100′ S. of Niagara, 150′ E. of Huron St.		495	205′	(Small well supplying one house. Neglected as unimportant)				
150′ S. of Niagara St., 300′ E. of Huron St.		496	210′	(Small well similar to one on Niagara and Huron St. Neglected as unimportant.)				
Bet. Otsego and Delano, Seneca and Geneva	Armenini	497	150′	Spring and surplus from wells	6′	0′	GarrattD. 5″x24″	30,000 for 2 wells
" "	"	498	150′	12″	65′	Flowing	5″x18″ Surface Hedges Dbl.	
Winnipeg and Niagara Sts.	Jim Varni	499	150′	10″	60′	Flowing	(Pumps and tanks removed. Temp. out of use.)	
" "	"	500	150′	14″	60′	"		"
Geneva St., bet. Otsego and Cayuga	Wm. Varni	501	150′	12″	60′	Flowing	6″x14″ Garratt D.	40,000 for 2 wells
" "	"	501-A	150′	Dug well 6′ sq.	40′	0′	7″x12″S.	
San Jose Ave., at paint shop, Elkton Yard	U. R. R.	11	218′	10″	80′	20′	1½″x9″ D. W.	3,000

WELL RECORD

ISLAIS CREEK DISTRICT—VICINITY OF EXCELSIOR AND OCEAN VIEW

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
San Jose Ave. and Geneva, rear of carhouse	U. R. R.	12	200′	24″	120′	40′	3″x18″ D. W.	10,000
W. side of Tara St., bet. Louisburg and Geneva Ave.	Pachetti's Nursery	504	260′	12″	95′	70′	(No pump installed.)	
		(Note: 2 wells, 50′ N. of one recorded and between 80 and 85 ft. deep without water.)						
N. Cor. Mt. Vernon and Tara Sts., No. 274 Tara St.	Capt. Smith	505	300′	12″ galv. 4x4 wooden	50′	25′ to 35′	Fairbanks & Morse D. W. 5″x10″	200
No. 299 Tara St.	McNulty	506	306′	21″ dia. brick	16′	11½′	Hand pump removed	0
N. Cor. Lakeview and Majestic Aves.	Perrari	507	345′	10″	105′	40′	D. W. D. 5¾″x10″	15,000
Lawrence St., bet. San Jose and Winnipeg	H. Plath, 4 dug wells	508 509 510 511	270′	Wooden casing 4′x4′	20′	10′ after pumping 0′ when not	3″x6″ Surface	3,000
S. E. Mission, S. W. of Acton	Crocker Est. Company.	15	320′	24″	200′	Meas. 140′	D. W. 8″x24″	25,000
				20″	(Pumping from this well has dried several wells in the vicinity.)			
Mission St., near Sickles Ave.	Crocker Tract Land Co.	16	320′	4″	100′	(This well abandoned and large well used entirely.)		

WELL RECORD

ISLAIS CREEK DISTRILT—VICINITY OF EXCELSIOR AND OCEAN VIEW

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
N. side Whipple St., bet. Winnipeg and Huron	N. P. Garassino	512	275′	14″	180′	80′	D. W. 7½″x15″ 48 rpm.	140,000 for 2 wells
" "	"	513	290′	8″	214′	80′	3½″x8″	
		513-a	(A sump of 200,000 gals. cap. fills in 48 hrs. from spring. This is pumped by another windmill.)					
100′ W. of Huron, 50′ N. Nagle St.	Giovanni's Nursery	514	240′	10″	132′	44–60	4″x 7″ D.W.	8,000
S. side Amazon near Munich St.	Crocker Est. Co	578	235′	10″	72′	....	6″x14″ D. W.	10,000 combined capacity 3 wells
S. side Amazon near Munich St.	Crocker Est. Co	579	235′	10″	72′	....	6″x16″	
E. side Munich, 300′ S. of Geneva Ave.	Crocker Est. Co	580	(Cannot get any information.)					
S. E. Cor. Munich and Amazon	Arata	13	225′	10″	30′	....	....	1,000
E. side Munich, bet. Amazon and Geneva Sts	Crocker Estate	14	242′	10″	200′	....	4″x14″	(Temp. out of use.)
N.E. Cor. Amazon and Munich Sts.	P. Isola	574	240′	14″	125′	Abt. 30′	D.W. 6″x16″	75,000 combined capacity of 4 wells.
N.E. Cor. Amazon and Munich Sts.	P. Isola	575	240′	14″	115′	" 30′	" 6″x16″	
N.E. Cor. Amazon and Munich Sts.	P. Isola	576	240′	14″	110′	" 30′	" 6″x16″	
N.E. Cor. Amazon and Munich Sts.	P. Isola	577	240′	14″	100′	" 30′	" 4″x16″	
N. E. Cor. Amazon and Lisbon Sts.	Diego	515	200′	Wooden 5′x5′	45′	15′	2½″x8″	3,000
W. side Moscow, bet. France and Italy, 225′ from Italy	A. Doerr	516	240′	12″	80′	50′	D. W. 2½″x6″	3,000

WELL RECORD

ISLAIS CREEK DISTRICT—VICINITY OF EXCELSIOR AND OCEAN VIEW

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
E. side Vienna, bet. France and Italy Sts.	Joe Linehan	517	242′	12″	65′	45′	D. W. 3½″x12″	200
E. side Munich, bet. Russia and Somps Tract	F. Grieber	518	270′	Wooden 5′x5′	45′	13′	Surface 2½″x5″	500
W. side Dublin St., bet. Russia and Somps Tract	T. Timka	519	271′	Wooden 5′x5′	65′	19′	2½″x6″	700
E. side Edinburgh bet. Persia and Russia Sts.	C. G. Smith	522	232′	8″	54′	12′	D. W. 2½″x6″	500
S. E. Cor. Persia and Naples Sts.	P. T. Wolf	523	252′	10″	136′	57′	D. W. 4″x6″	500
E. side Moscow St., bet. Excelsior Ave. and Brazil	N. Roberst	524	320′	Brick 8′	50′	44′	D. W. 2½″x6″	250
W. side Prague, bet. Excelsior Ave and Brazil	F. J. Kremer	525	371′	Wooden 4′x4′	25′	19′	Surface 2½″x6″	60
W. side Prague bet. Excelsior Ave. and Brazil	G. H. Tubbs	526	378′	Brick 4′	34′	29′	Pulley and bucket	20
E. side Moscow, bet. Excelsior Ave. and Brazil	C. Hempler	527	365′	Brick 4′	50′	42′	D. W. 2½″x6″	200
S. E. Cor. Edinburgh and Excelsior Ave.	S. Bassler	528	259′	Brick 4′	48′	38′	D. W. 2½″x7″	200
E. side Lisbon, bet. Avalon Ave. and Excelsior Ave.	W. Moran	529	222′	Wooden 9′x9′	42′	16′	2½″x5″	5,000

WELL RECORD

ISLAIS CREEK DISTRICT—VICINITY OF EXCELSIOR AND OCEAN VIEW

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
E. side Madrid, bet. Avalon and Excelsior Aves.	W. Brown	530	277′	Brick 5′ dia.	45′	18′	D. W. 2½″x5″	100
E. side San Jose Ave., 400′ N. of Ocean Ave.	Ferrula	587	170′	12″	80 or 90′	34′ ?	Hall 1½″x5″	300
150′ E. of San Jose Ave., 300′ S. of Santa Inez Ave.	....	588	170′	8″	150′	26′	Surface 2″x6″ Douglas	0 (Out of use.
100′ N. of Onondaga, 100′ E. of Delano	G. Cavagnaro	589	170′	12″	61′	30′	D.W.2½″x6″ Single	1,000
200′ N. Onondaga, 200′ E. Delano	S. Bottini	590	155′	14″	195′	....	6″x14″ Double	30,000
100′ S. Allan Ave., 150′ E. San Jose Ave.	P. Arata	591	180′	12″	100′	35′	D. W. Hall 3″x7″S.	2,000
200′ E. San Jose Ave., bet. Oneida and Seneca Aves.	Jos. Capurro	592	180′	8″	80′	35′	Hedges 2½″x6″	200
50′ S. Onondaga Ave., bet. Otsego and Delano	Gianbruno	593	160′	10″	100′	30′	2½″x5″	1,000
370′ S. Onondaga, 130′ W. Otsego	Mrs. Capurro	594	150′	12″	110′	25′	3½″x5″S.	2,000
N. E. Cor Onondaga & Otsego	Reichardt	19 2 wells	158′	12″ 12″	100′ 100′	30′ 25′	(Two wells discharge into same tank. Water is very good. Supplies 3 families and stables.)	500

WELL RECORD

ISLAIS CREEK DISTRICT—VICINITY OF EXCELSIOR AND OCEAN VIEW

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
N. Cor. of Mission and Bauer Sts.	Mr. L. Cavagnero	20	166′	12″	67′	....	3″x6″	500
Bauer St., bet. Mission and Allemany	G. Descagnia	21	115′	12″	85′	30′	6″x16″ D. W.	4,000
Santa Rosa Ave. and Bauer Sts., Vegetable gardens along R. R. track	Cereghino	22 2 wells	140′	12″ 12″	100′ 100′	....	D.W.6″x16″ D.W.6″x16″	10,000 10,000
Onondaga, near Cayuga poultry ranch	F. Cresta	17	144′	8″	48′	14′	Surface $2\frac{1}{2}$″x6″	200
N. Onondaga St., bet. Watson Pl. and Cayuga Ave.	Hayes Park Laundry	18	121′	12″	75′	Flow	Surface S. 4″x20″	15,000
50′ W. Mission St., 150′ S. of Onondaga	L. Renner	595	153′	10″	50′	16 to 18′	D.W. 4″x8″	2,000
Bet. Otsego and Cayuga, S. of Oneida	S. Bottini	596	155′	14″	125′	10′	D. W. 6″x16″S.	60,000 for 2 wells.
Bet. Otsego and Cayuga, N. of Oneida	S. Bottini	597	155′	14″	125′	10′	D. W. 6″x16″S.	
Bet. Otsego and Cayuga, Oneida and Onondaga	S. Bottini	598	155′	14″	100′	10′	6″x16″S.	(Temp. out of use.)
Cor. Otsego and Seneca	Marengo	599	155′	10″	100′	30′	$2\frac{1}{2}$x″6″	400
Bet. Delano, Otsego, Seneca and Geneva	Armenini	600	155′	14″	80′	20′	6″x16″	30,000

WELL RECORD

ISLAIS CREEK DISTRICT—VICINITY OF EXCELSIOR AND OCEAN VIEW

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
400′ W. Mission, 600′ S. Onandaga	A. Tiscornia.	601	140′	14″	125′	10′	6″x14″ D.W. Sing.	75,000 for 2 wells
Cayuga, bet. Oneida and Seneca. .	A. Tiscornia.	602	140′	14″	125′	10′	6″x12″ Surface Dbl.	
E. Winnipeg, 200′ S. Geneva St. .	G. Varni.	603	150′	20″	50′	Flows	Surface 6″x16″ Dbl.	50,000 for 2 wells
E. Winnipeg, 100′ S. of Geneva St.	G. Varni.	604	150′	14″	50′	Flows	Surface 6″x16″ Dbl.	. . . .
29th and Mission Sts., 27 Santa Rosa Ave.	De Paoli.	492	158′	10″	80′	20′	Deep well 3″x6″ Single	3,000
100′ N. on Santa Rosa, 250′ W. of Mission St.	Cereghino.	493	160′	8″	65′	. . . .	Deep well 2″x6″	200
300′ E. and 300′ S. of Junction of Corbett Road and Almshouse Road.	(Spring, not flowing.) Located in vegetable gardens.	571	535′	Water hole, dug	(No pump, there is a walking beam in place but no bucket.)			
Balboa Park, 200′ W. of San Jose, 500′ N. Ocean Ave.	(Oliva former lessee). . . City	503	173′	14″	90′	45′	D. W. 5″x20″ 30 rpm	32,000
N. side Silver Ave., bet. Graut and Congdon, 100′ E. of Graut, 100′ in.	Martin Kelly. . . . . (Owner states the yield can be increased by larger pump.)	612	190′	6′x6′	72′	17′	Deep Well 2″x8″	500

Bay View District

Present yield 537,480 gallons per day from 71 wells and 4 springs, or an average yield per well of over 7,100 gallons per day.

Thirty wells in this vicinity have a yield of 410,000 gallons per day or an average yield per well of 14,000 gallons per day; and out of this 30, there are 4 wells located near the "Lick Old Ladies Home," which have a yield of 150,000 gallons per day, or an average yield per well of 37,000 gallons per day.

10	Wells not in use
71	Wells in use
4	Springs in use
85	Wells and Springs

WELL RECORD

BAY VIEW DISTRICT

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
W. Side Cambridge, bet. Wayland Ave. and Bacon	Lasaro Cotali	406	210′	Wooden 8′ dia.	30′	15′	3″x6″Sur	20,000
E. Cambridge, bet. Wayland and Bacon, 150′ from Wayland	B. Goldstein	407	200′	Wooden 6′x6′	45′	25′	3″x6″ D. W.	200
E. Oxford, bet. Wayland and Woolsey	Menjus	408	220′	Wooden 5′x5′	45′	25′ Meas.	2½″x6″	(Temp. out of use.)
N. side Harvard, bet. Wayland and Woolsey	....	409	290′	Wooden 4′x4′	20′	15′ Meas.	2½″x6″	20 (Temp. out of use.)
W. Cambridge, bet. Dwight and Olmstead St.	S. Toviska	410	320′	Wooden 4′x4′	20′	17′ Meas.	Surface 3″x5″	100
E. Gambier, bet. Dwight and Olmstead	E. H. Stowe	411	360′	Wooden 3′	10′	7′	Pulley and bucket	20
E. Cambridge, bet. Dwight and Olmstead	F. Downs	412	320′	Wooden 4′x4′	20′	14′	3″x5″ Surface	40
E. Cambridge, bet. Dwight and Olmstead	Lick Old Ladies' Home	413	300′	Wooden 4′x4′	15′	10′	Water runs by gravity	10,000
S. E. Amherst St. and Wayland St	Leon Winart	414	175′	Wooden 4′x4′	55′	30′	4″x6″	3,000

WELL RECORD

BAY VIEW DISTRICT

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
N. side Wayland bet. University Ave., Princeton and Amherst Sts.	Sers & Rosse Co., 2 wells	415 416	170′	Wooden 5′x5′	40′	20′ Meas.	4″x6″	10,000 for 2 well
420′ W. Somerset, bet. Wayland and Woolsey	L. Ciapali	420	90′	10″	75′	20′ Meas.	Douglas 3½″x6″	4,000 2 wells
420′ W. Somerset, bet. Wayland and Woolsey	L. Ciapali	422	90′	Wooden 10′x10′	40′	13′	D. W. Douglas 4″x6″	
E. Somerset, bet. Woolsey and Wayland	John Pfenninger	421	75′	Wooden 8′x8′	18′	3′ Meas.	Surface 3½″x8″	1,000
W. side Colby, bet. Dwight and Omstead	Lick Old Ladies' Home	424	280′	(Spring supplies the Lick Old Ladies' Home. The water runs by gravity.)				5,000
University Ave., bet. Dwight, and Olmstead	Belua	425	300′	(Spring)	(Of these 2 springs the water runs by gravity to the dairy at S. W. Cor. University and Woolsey, supplying 12 head of cattle.)			8,000
S. E. Dartmouth and Dwight	Belua	427	200′	(Spring)				
N. E. Cor. Mansell and University	G. Pardini	426	370′	Wooden 3′x3′	62′	35′ Meas.	2½″x4″	400
E. side of Hamilton, bet. Dwight and Olmstead	J. D. Ohlroggen	428	220′	Wooden 4′ dia.	35′	17′ Meas.	3″x6″	40
N. W. Cor. Dwight and Goettingen	P. Jarmakovsky	429	150′	Wooden 4½′x4½′	30′	25′ Meas.	2″x6″	40
S. E. Cor. Felton and Bowdoin Sts.	E. Muzio	417	114′	Wooden 3′x3′	25′	17′ Meas.	2″x6″	150

WELL RECORD

BAY VIEW DISTRICT

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
S. E. Cor. Felton and Holyoke Sts.	Ferrari Bros.	418	97′	Wooden 6½′ dia.	83′	25′	D. W. 4″x24″	5,000
E. side Somerset, bet. Felton and Burrows Sts.	California Evergreen Co.	419	90′	Wooden 9′ dia.	35′	14′ Meas.	4″x6″	8,000
W. San Bruno Ave., Bacon and Wayland.	Geo. Cafferata.	430	55′	Wooden 4′x4′	25′	14′ Meas.	2½″x6″	100
W. Charter Oak, Bacon and Wayland Sts.	Stagnaro.	431	32′	8″ galv.	85′	30′	2½″x6″ D. W.	2,000
E. side Charter Oak, cor. Phelps St.	Arata.	432	35′	Concrete 7′x7′	40′	22′ Meas.	4″x4″ D.W.	800
W. side Charter Oak, bet. Bacon and Burrows.	C. B. Passalacqua.	433	65′	8″ galv.	60′	25′	3″x6″ D.W.	1,000
S. W. Cor. San Bruno and Burrows Sts.	Rossi Co.	434	58′	12″ galv.	56′	30′	3″x6″	400
N. side Carroll Ave., bet. Quint and Phelps Sts.	W. Schaefer.	435	30′	8″ galv.	80′	30′	2½″x6″	1,000
N. E. Cor. Thornton Ave and Waterville St.	A. Boiteno.	436	60′	10″	100′	35′	5½″x14″ Dbl.	30,000
W. side Apollo, bet. Williams and Thornton Sts.	Sanesse.	437	90′	8″	98′	60′	D.W. 3″x6″	2,000
N. W. Cor. Williams Ave. and Apollo St.	L. Serratto.	438	60′	8″	105′	60′	3″x12″	300

WELL RECORD

BAY VIEW DISTRICT

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
N. E. on Carroll, 200′ S. E. Phelps	John Batis.	439-A	18′	16″	130′	10′	4″x14″	60,000 for 2 wells
S. W. on Carroll, 200′ S. E. Phelps	John Batis.	439-B	18′	18″	150′	10′	5″x14″	
N.E. on Carroll, 400′ S.E. of Phelps	Louis Feragiro.	440	16′	12″	125′	10′	4½″x14″	50,000 for 2 wells
S.W. on Carroll, 400′ S.E. of Phelps	Louis Feragiro.	441	16′	12″	125′	10′	5½″x14″	
Westerly Cor. Carroll Ave. and Newhall St.	L. Cerato.	442	18′	10″	125′	. . . .	6″x18″	50,000 for 3 wells
Northerly Cor. Carroll Ave. and Newhall St.	L. Cerato.	443	18′	10″	125′	. . . .	6″x18″	
Easterly Cor, Carroll Ave. and Newhall St.	L. Cerato.	444	18′	10″	125′	. . . .	6″x18″	
Mendell and Egbert Sts.	Mrs. Garbarino.	445	30′	8″ galv.	75′	25′	4″x16″	30,000 for 3 wells
Newhall and Egbert Sts.	Mrs. Garbarino.	446	30′	15′ wood	20′	8′ Meas.	3″x8″ Dbl.	
Fitzgerald, near Mendell	Mrs. Garbarino.	447	30′	15′ wood	20′	8′ Meas.	3″x8″ Dbl.	
E. side San Bruno Ave., bet. Woolsey and Dwight Sts.	M. Garbarino.	448	47′	6″ galv.	40′	20′	3″x6″	500
E. side Charter Oak, bet. Woolsey and Dwight Sts.	Thompson.	449	45′	Wooden 10′x10′	25′	5′	3″x6″	20,000 for 3 wells
Charter Oak and Dwight Sts.	Thompson.	450	45′	10″ galv.	25′	5′	3″x6″	
Dwight and Wheat Sts.	Thompson.	451	45′		102′	15′	4″x18″	
S. side Bancroft Ave., bet. Mendell and Lane Sts.	F. Brusco.	581	12′	12″ galv.	125′	20′	4½″x12″	30,000 for 2 wells
" "	"	582	12′	12″ galv.	125′	20′	4½″x12″	

WELL RECORD

BAY VIEW DISTRICT

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
E, side Mendell, bet. Donner and Egbert Sts.	T. G. Necco	452	10′	12″ galv.	125′	20′	Garratt 5″x12″	50,000 for 4 wells
S. side Egbert, bet. Lane and Mendell Sts.	T. G. Necco	453	10′	10′ dia.	25′	....	....	....
Cor. Lane and Donner Sts.	T. G. Necco	456	10′	12″ galv.	125′	20′	Garratt 5″x12″	
N. E. Cor. Egbert and Lane St.	T. G. Necco	457	10′	10′ dia.	25′	....	....	
Fitzgerald St., bet. Lane and Mendell Sts.	S. Logetani	454	30′	10″ galv.	65′	20′	4″x8″	30,000 for 3 wells
S. W. Cor. Lane and Gilman Sts.	S. Logetani	455	30′	10″ galv.	100′	20′	4″x8″	
S. side Fitzgerald, bet. Keith and Lane Sts.	S. Logetani	458	30′	10″ galv.	75′	20′	4″x8″	
N. W. Cor. San Bruno Ave.	Mrs. Western	243	100′	6″ galv.	85′	45′	$2\frac{1}{2}$″x6″	100
W. Cor. of Meade and Railroad Ave.	Catherine Tannin	461	115′	Brick 5′ dia.	16′	12′	3″x6″	100
W. side Railroad Ave., bet. Paul and Salinas Sts.	Schwaller	459	23′	12″ galv	150′	91′ ?	(Out of use)	
N. side Ingerson, 100′ E. of Railroad Ave.	Mrs. Forman	460	31′	4′x7′ Wooden	20′	5′ Meas.	$2\frac{1}{2}$″x6″	100
N. side Ingerson, bet. Ingalls and Hawes Sts.	L. Jacquot	462	40′	4′x4′ Wooden	63′	40′	D. W. 2″x6″	100
N. side Gilman Ave., bet. Hawes and Griffith Sts.	J. M. Bourda	463	10′	4′x4′ Wooden	25′	15′ Meas.	$2\frac{1}{2}$″x6″ Surface	1,000

WELL RECORD

BAY VIEW DISTRICT

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
S. side Egbert Ave., bet. Jennings and Ingalls	Mrs. Chicino	464	10′	12″ galv.	120′	3′ ?	4″x16″	1,000
S. side Bancroft, bet. Jennings and Keith	Peter Bartolone	465	5′	22″	145′	....	6″x18″	40,000
S. Armstrong, bet. Jennings and Keith Sts.	Peter Bartolone	466	5′	22″	145′	....	4″x18″	for 3 wells
S. Cor. Armstrong and Keith	Peter Bartolone	467	5′	16″	126′	....	4″x18″	
N. side Yosemite Ave., 500′ E. of Railroad Ave.	Visitacion Water Company	483	5′	14″	120′	Flowing	(6 wells now capped with concrete. When in use, water was sold in Potrero, Bay View, etc. Pumps, boilers, etc., removed about 1904. Presumably bought by Spring Valley Water Co.)	
N. Cor. Armstrong Ave. and Keith	Teria Giaro	583	8′	14″	140′	20′	6″x14″	30,000
N. E. Cor. Egbert and Railroad Ave.	Teria Giaro	584	8′	12″	120′	20′	4½″x14″	for 2 wells
S. side Underwood, bet. Keith and Jennings Sts.	C. Ney	469	7′	Concrete and brick, 5½′ dia.	20′	12′ Meas.	3″x6″	1,000
S. side Thomas Ave., bet. Keith and Jennings	C. Scheikert	468	22′	Brick 5′ dia.	30′	24′ Meas.	Douglas 2½″x6″	1,000
S. side Thomas Ave., bet. Keith and Jennings	C. N. Searle	470	21′	Brick 5½′ dia.	32′	26′ Meas.	D.W. 3″x8″	2,000
S. Revere Ave., bet. Keith St. and Jennings	C. Engel	471	45′	Wooden 4′x4′	37′	32′ Meas.	(Pump is out at present. Owner says it is a good well.)	300

WELL RECORD

BAY VIEW DISTRICT

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
S. W. Palou Ave., bet. Jennings and Ingalls Sts.	Marin Andrea	471-A	102′	Wooden 4′x4′	30′	27′ Meas.	2″x6″	300
" "	"	471-B	108′	4′x4′	70′	45′ Meas.	2″x6″	300
N. Newcomb Ave., bet. Lane and Keith Sts.	Emil Richards	472	165′	Wooden 4′x4′	30′	28′ Meas.	D. W. 2½″x6″	250
N. Newcomb St., bet. Keith and Lane Sts.	Geo. W. Coffey	473	170′	Brick and wooden 4′ dia.	32′	30½′ Meas.	2″x5″	100
N. side Oakdale Ave., bet. Keith and Jennings Sts.	Chas. Migeot	474	164′	5′ dia.	27′	18′ Meas.	2″x6″	120
N. side Oakdale Ave., Ingalls and Hawes St.		482	100′	Rock masonry	Spring 8′	(No further information obtainable.)		
W. Cor. Thomas Ave. and Hawes St.	Western Tallow Company	475	10′	Wooden 5′x5′	25′	5′	3¾″x4″	0 (Out of use)
S. Cor. of Shafter and Hawes Sts.	Mary Lacoste	476	9′	Wooden 4′x4′	15½′	10′ Meas.	2½″x6″	100
S. side Quesada, bet. Hawes and Griffith Sts.	C. B. Finocchio (3 wells)	477 478 479	10′ (Same data covers 3 wells.)	10″	75′ to 100′	About 30′	4″x12″	5,000
W. Cor. Revere & Griffith Sts.	Wm. Taaffe	480	1′	18″ 14″	160′	14′	Garratt 5″x14″	20,000
N. side Oakdale Ave., bet. Griffith and Fitch St.	Mary Suttich	481	20′	Wooden 6′x6′	20′	4′ Meas.	2″x6″	1,500

Visitacion Valley District

Present yield 294,300 gallons per day from 30 wells, or an average yield per well of 9,810 gallons per day.

9	Wells not in use
30	Wells in use
39	Wells

WELL RECORD

VISITACION VALLEY DISTRICT

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
S. side of Leland, about 200′ W. of San Bruno Ave.	City and County	206	34′	20″	149′	Feb. 1, 19′—after pumping 10 hrs. 62′	9¾″x16″ 35 rpm.	70,000
	(Note:—Pumps into sump, whence it is pumped by a 6½″x8″ triplex pump, 30 strokes per min. 173— static to reservoir.)							
Tucker St., bet. Delta and Beta Sts.	M. Choen	207	160′	6′	70′	D.W. 3″x12″	....	0 (Not in use)
Campbell Ave., bet. Beta and Delta Sts.	Hildebrand	208	128′	8″	120′	15′	2½″x7″	150
N. W. Cor. Arleta and Delta Sts. N. W. Cor. Arleta and Delta Sts.	C. B. Pisano C. B. Pisano	209-a 209-b	100′ 106′	10″ 10″	106′ 76′	30′ 20′	D.W. 4″x8″ D.W. 4½″x7″	2,000
150′ E. on Delta, bet. Teddy and Arleta Sts.	C. B. Nuyess	210	90′	6″	90′	....	D.W. 3″x6″	200
Leland Ave. and Vassalboro	C. A. Luis	211	60′	4′x4′	25′	16′	Hand pump	Out of use.
Visitacion Ave. and Brown St.	....	212	200′	12″	72′	52′	D.W. 3″x24″	500
50′ in rear of 262 Spreckels Ave., 600′ S. of Sunnydale Ave.	....	213	70′	4′x4′	30′	(Water poor in this well for last 5 years—Last summer went dry and has yielded no water since.)		
W. side of Spreckels St., 600′ S. of Sunnydale Ave.	Theo. Wellar	214	68′	3′x3′	36′	33′	D.W. 2″x14″	200
W. side Spreckels St., 630′ S. of Sunnydale Ave.	Mechida	215	70′	3′x3′	32′	31′	....	50
				(Hardly enough water to supply drinking water.)				

WELL RECORD

VISITACION VALLEY DISTRICT

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
No. 262 Hahn St., 600′ S. of Sunnydale Ave.	Laman	216	60′	4′x4′	29′	22′	Surface 2″x6″	500
Schwerin St., 700′ S. of Sunnydale Ave.	Celeste—vegetable gardens	217	30′	12″	125′ or 130′	....	D.W. 4″x36″	0
			(This well is dry, no water in it at all—has not been since last summer.)					
Schwerin St., 750′ S. of Sunnydale Ave.	Celeste—vegetable gardens	218	20′	12″	130′	30′	D.W.4″x36″	1,000
				(This well nearly went dry last summer.)				
Schwerin St., 700′ S. of Sunnydale Ave.	Celeste—vegetable gardens	219	25′	12″	130′	30′	D.W.4″x36″	1,000
				(Last summer this well was nearly dry.)				
Schwerin St., 700′ S. of Sunnydale Ave., 150′ W. of Schwerin	Celeste—vegetable gardens	220 221	20′ 20′	14″ 14″	140′ 140′	40′ 40′	D.W.6″x40″ " 6″x40″	5,000
	(These 2 wells are about 50′ apart, operated simultaneously from same shaft by a 10 H. P. G. engine. Two wells duplicate in every respect, their combined capacity per hour is 15,000 gals. For the last 2 years yield is less and pumping period longer—water has lowered in the wells very noticeably. Nearly dry last summer.)							
Walbridge and Sunnydale Sts., 600′ S. on Vassalboro	F. Ferrary	222	5′	16″	150′	....	D. W. 6″x16″	25,000 for 3 wells.
150′ E. of above well	F. Ferrary	223	5′	16″	135′	....	D. W. 6″x18″	
200′ E. of above well	F. Ferrary	224	5′	6″	50′	....		
Sunnydale and Walbridge, 650′ S. of Sunnydale on W. line of Peabody	Sechine	225	15′	10″	160′	Overflow	D. W. 6″x20″	50,000 for 3 wells.
350′ E. of previous well	Sechine	226	15′	3½′	15′	Flowing	Chain-buckets 5″x5″	
250′ E. of previous well	Sechine	227	15′	5″	25′	"		....
Visitacion and San Bruno Aves.	W. Eisler	228	17′	4′x4′	20′	15′	Surface 2½″x6″	200

WELL RECORD

VISITACION VALLEY DISTRICT

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
Bet. Visitacion and Sunnydale, 250′ E. San Bruno	S. P. Co.	229	17′	10″	164′	4½′ Meas.	....	0 Out of use.
San Bruno Road about 4,000′ S. of County Line	Pacific Bone & Fertilizer Co.	230	5′	Dug 8′	75′	18′	6½″x24″	100,000 for 2 wells.
" "	" "	230-a	5′	Dug 6′	65′	Flowing	4″x22″	
S. E. Cor. Schwerin and Walbridge	Pacific Gas & Elec. Co.	234	18′	16″	114½′	Flowing	Ames Dbl. 7″x48″	
" "	" "	231	18′	16″	128′	Flowing	Airlift	
" "	" "	232	18′	16″	113′	Flowing	Dow Sng. 9¼″x24″	
" "	" "	233	18′	16″	123′	Flowing	Marsh Sng. 6¼″x24″	
	(Note:—This plant is only an auxiliary station for gas making and wells are drawn from only when gas is being made. Wells 4, 2, 3 were the ones used. After the airlift was installed in well 231, the well was used for one day when work was stopped and plant shut down.) (Tested by Pacific Gas & Electric Co. Gave 20,000 gals. per hour.)							
50′ W. of Schwerin, 500′ S. Walbridge	Schwerin	235	20′	12″	125′	Flowing	D.W.5″x16″	10,000
Rey St., 550′ S. of Walbridge	Schwerin	236	25′	10″	125′	Flowing	D.W.4″x14″	10,000 ?
						(No information available.)		
100′ W. of Brittan and 600′ S. of Walbridge	Schwerin	237	35′	18′	30′	0	Surface 4″x14″ Douglas force 2″x4″ to high tank.	7,000
Brittan St., 300′ S. of Walbridge	Schwerin	238	60′	7″	75′	25′	D.W. 3″x8″	500
50′ W. of Sawyer and 400′ S. Walbridge	Schwerin	239	70′	10″	125′	40′	Golden G. 4″x14″	5,000

WELL RECORD

VISITACION VALLEY DISTRICT

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
About 1000′ W. Schwerin St.	Schwerin	240	80′	14″	110′	. . . .	D.W.6″x16″	5,000
About 800′ S. Walbridge St.		241	150′	10″	100′	No water	. . . .	. . . .
S. W. Cor. Carter and Walbridge Sts.	. . . .	242	(Note:—Spring—Present yield about 1000 gals. per day.)					

Lake Merced and Sunset Districts

Present yield 457,795 gallons per day from 54 wells, or an average yield per well of 8,500 gallons per day.

The two sumps included in this list are located in Golden Gate Park and have yields of 77,000 and 60,000 gallons per day respectively.

Two wells on Spring Valley property have a combined yield of 90,000 gallons per day and one well of the Vista Grand Water Company has a yield of 75,000 gallons per day.

14 Wells not in use
54 Wells (2 sumps) in use

68 Wells and sumps

WELL RECORD

LAKE MERCED AND SUNSET DISTRICT

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
24th and 25th Aves., Cabrillo and Fulton	C. F. A. Last	48	120′	12″	120′	0 to 20′	Surface 3″x4″	2,000
No. 730 28th Ave., E. side, bet. Balboa and Cabrillo	Witham	49	200′	6″ 5″	87′	78′	D. W. 3″x5″	200
15th Ave., bet. Anza and Balboa Sts.	Greenfield	50	195′	6″	125′	....	4″x6″	Out of use
36th Ave., bet. Cabrillo and Fulton Sts.	R. P. Reed	51	117′	7″	70′	45′	D.W. 4″x6″	50
N. W. Cor. Fulton and 36th Ave.	Jas. Cairns	52	116′	10″	76′	36′ Meas.	(Well never used.)	
No. 734 46th St., near Balboa St.	John Phelan	53	77′	6″ and 5″	50′	20′	D.W. 2″x6″	200
S. E. Cor. 49th and Balboa	Chas. Mitchell	54	19′	14″	55′	30′	D. W. 4¾″x36″	3,000
49th Ave., bet. Balboa and Cabrillo	A. P. Hotaling	55	20′	8′ sq.	30′	20′	D.W. 2″x8″	
		(Now abandoned since Lurline well was sunk. Water always was good.)						
E. side Great Highway, about 200′ S. of Balboa	Olympic Salt Water Co.	56	15′	12″	80′	16′	Surface 5″x3″x5″ 2″ suction 1½″ discharge	5,000
50′ W. of 47th Ave., 100′ S. of Cabrillo St.	Sutro Estate	57	32′	Dug	(No information obtainable from Mrs. Merritt.)			
		(Note: When sewer on 48th Ave. was being constructed in 1912, the continued pumping temporarily dried this well.)						

WELL RECORD

LAKE MERCED AND SUNSET DISTRICT

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
49th and Fulton................	Sheehan's, Hotaling, owner..............	58	19′	6″	85′	12′	D. W.	(Now aband.)
S. W. Cor. 49th Ave. and Fulton...	U. S. Life Saving Service	59	15′	Dug 6′ dia.	8′	....	Surface	500
		(Fresh water pond at Dutch Windmill across 49th Ave. from here.)						
E. side 42nd Ave., Lincoln Way and Irving St................	W. W. Thayer.........	60	80′	6″	58′	25′	D.W. 3″x6″	200
No. 4419 Irving, bet. 45th and 46th Aves........................	Hannum.............	61	43′	6″	80′	60′	D.W. 3″x6″	(Out of use now.)
			(Very good well for quantity. Water good.)					
No. 1338 47th Ave., bet. I and J Sts.......................	Mrs. Abbe L. Patriarche	62	24′	6″	32½′	....	Surface 4½″x6″	100
No. 1356 48th Ave., bet. 1 and J	J. W. Setterberg.......	63	21′	6″	30′	....	Surface 3″x6″	200
No. 1392 La Playa at Judah St..	Mullen...............	64	20′	6″	48′	3′ 7″ Meas.	Surface 2″x6″	200
No. 1420 49th St., bet. J and K..	Pasmore.............	65	11′	6″	35′	....	Surface 2″x4″ and 2″x8″	200
No. 1460 49th Ave., bet. J and K	Jennicke.............	66	11′	6″	60′	5′	D.W.	100
No. 1486 La Playa, 100′ N. of Kirkham....................	Irvine...............	67	10′	6″	45′	10′	Surface 2″x6″	500
48th Ave. and Lawton, S. E. Cor..	J. R. Andrus..........	68	15′	6″	80′	....	Surface 1½″x6″	250

WELL RECORD

LAKE MERCED AND SUNSET DISTRICT

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
No. 1628 48th Ave., bet. L and M.	Nathanson	69	18′	6″	82′	....	D. W. 3½″x6″	200
E. side 45th Ave., S. of Moraga St.	Nathanson	70	50′	6″	72′	....	(Now abandoned)	
S. E. Cor. 45th and Noriega	Mrs. Twist-Daiss	71	70′	6″	85′	....	Surface 2″x6″	3,500
50′ E. of 48th Ave., bet. Rivera and Santiago	Shorty Roberts	72	12′	5′ sq.	30′	16′ Meas.	Surface 1½″x6″	1,000
47th Ave., bet. R and S	Stephen Salles	73	20′	Dug 5′ sq.	26′	15′	Surface 1½″x6″	100
47th Ave. and S St.	Capt. John Loane	74	20′	19″	24′	17′	Surface 1½″x6″	475
No. 2349 45th Ave., bet. S and T	W. W. Fairbanks	75	20′	6′ sq.	30′	22′ Meas.	Surface 1½″x6″	100
No. 2400 48th Ave.	Dibble	76	13′	6″	40′	10′	Surface 1½″x6″	3,000
No. 2444 48th Ave., bet. Taraval and Ulloa	McCarthy	77	13′	6″	38′	....	Surface 1½″x6″	500
Great Highway, bet. U and V	Mr. Alex. Russell	78	35′	12″	100′	23′	2″x24″ cylinder	10,000
42nd and T St.	R. F. Dingley	79	120′	5″	75′	65′	D. W.	(Not yet in use)

WELL RECORD

LAKE MERCED AND SUNSET DISTRICTS

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
Pacheco and Quintara Sts.	C. P. Ciudicelli	80	130′	6″	35′	20′	Hoosier Force 3″x4″	100
Yorba St., near 40th Ave.	E. Webb	81	60′	8″	92′	70′	D. W.	3,000
On Spring Valley property, opp. 39th Ave and Sloat Blvd	....	82	35′	20″	125′	....	D. W. 6″x16″ Single	45,000
Vegetable Gardens	....	82-a	35′	20″	125′	....	D. W. 6″x16″ Single	45,000
Merced Ranch, Sloat Blvd., opp. 30th Ave.	Vegetable Gardens	83	107′	14″	185′	60′	Db. Ac. D. W.	20,000 for 8 mos.
Merced Ranch, Sloat Blvd., opp. 25th Ave.	Vegetable Gardens	84	156′	12″	150′	60′	D. W.	30,000
31st Ave., bet. K and L.	Toy	85	225′	12′x9′	23′	13′ Meas.	Surface 2″x10″	8,000
29th Ave., bet. L and M.	Chas. Richard	86	255′	8″	68′	63′	D.W. 4″x6″	20
No. 1642 L St., bet. 22nd and 23rd Sts.	Chas. Lee	87	260′	6″	50′	44′ Meas.	D.W. 4″x6″	100
No. 1549 22nd Ave., bet. K and L	Bare	88	280′	6″	62′	....	D. W. 2½″x6″	100
No. 1565 22nd Ave., W. side., bet. K and L.	Chas. White	89	260′	6″	75′	52′ Meas.	D.W. 3″x8″	1,000

WELL RECORD

LAKE MERCED AND SUNSET DISTRICTS

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
No. 1587 22nd Ave., 100′ N. of L St	John Gustavson.	90	260′	6″	62′	40′	D.W. 2″x9″	200
No. 1439 Lawton St., bet. 20th and 21st Sts.	Chas. Kruck.	91	305′	6″	102′	93′	D. W. 3–1/8x12″ (Water very good)	200
19th and Lawton St., N. W. Cor. . .	M. B. Brady.	92	317′	10″	180′	(Now abandoned)		
19th Ave., bet. L and M, about 100′ N. of Moraga St	Earl C. Larsen.	93	318′	12″	67′	. . . .	D. W.	1,000
No. 1722 19th Ave., 150′ S. of Moraga St.	Healey (with White Machine Co.), 6th and Brannan St.	94	345′	6″ ?	96′	. . . .	D. W.	100
No. 1805 19th Ave., bet. N. and O.	T. H. Mitchell.	95	344′	6″	40′	30′	D. W. 2½″x12″	200
N. St., bet. 19th and 20th Aves. . . .	Duke.	96	350′	3½′ sq. concrete lined	35′	30′	Surface 2″x6″	200
19th Ave., W. side, bet. N. and O. .	Mrs. Hasty.	97	340′	10″ and 8″	105′	60′	D. W. 2¼″x6″	100
No. 1822, 19th Ave., near Noriega.	Mrs. A. C. Friend-Ward.	98	360′	6″	70′	40′	D. W. 1½″x6″	500
19th Ave., 100′ N. of Ortega St. . . .	Mr. Lang.	99	365′	6″ and 5″	236′	212′?	D. W. 1¾″x10″	400

WELL RECORD

LAKE MERCED AND SUNSET DISTRICTS

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
13th Ave. and P St., approx. on westerly slope—Spring........	Carl G. Larsen........	100	700′	Dug 6′x6′	27′	....	....	500
No. 2022 19th Ave., bet. P. and Q.	R. Bodie.............	101	417′	8″	140′	(Engine gone. Well now dry.)		
No. 2026 19th Ave., bet. P. and Q.	C. S. Tulloch..........	102	420′	8″	92′	....	D.W. 4″x6″	(Could pump well dry in 10-15 min.)
		(Note:—Well went dry when Bodie well No. 101 was sunk about 25′ north of this well.)						
No. 2038 19th Ave., bet. P and Q..	Thos. Learned........	103	420′	6″	85′	Dry since July, 1912	D. W. $1\frac{1}{2}$″x6″	0
Golden Gate Park, Murphy Wind Mill, 300′ N. of Lincoln Way, 200′ E. of Great Highway.....	City.................	326	18′	Sump 200′x12′x 16′ Undergrd.	24′	8′	2 Dow Triplex 10″x12″ Single	77,000
Golden Gate Park, Dutch Mill, S. E. of 49th and Fulton.........	City.................	325	24′	Sump 250′x12′x16′ Underground	20′	12′	2 Dow Triplex, 8″x10″	60,000
Lot 7, Blk. 8, Ocean View Park, W. side Chester St., 160′ N. Palmetto..................	City and Suburban Inv. Co................	607	210′	14″ galv.	178′	110′	Dbl. $5\frac{3}{4}$″x36″	30,000
Daly City....................	Vista Grand Water Co .	608	160′	24″ & 12″	260′	(No pump. This is an auxiliary well, in case main well goes dry.)		
Daly City....................	Vista Grand Water Co .	609	240′	12″ & 14″	280′	60′	Fairbanks-Morse 14″	75,000

WELL RECORD

LAKE MERCED AND SUNSET DISTRICTS

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
Dewey Cr., about 1000′ N. E. of junction of Corbett Road and Sloat Blvd.	Lagomarsino (Tenant)	567	250′	12′ sq. 10″	24′ 172′	(This well was a failure and never used.)		
1200′ S. main road, Forest Hill Tract Office, 100′ E. Dewey Blvd., 800′ W. of Corbett Road	Arata (Tenant on Sutro Est.)	568	440′	Dug well 6′ sq.	16′ (Pump and windmill now gone.)	11′	....	Abt. 2,000
100′ W. Corbett Road, 800′ S. W. Sutro Ranch	Arata (Tenant Sutro Est.)	569	535′	10′ dia. 2″ lagging	12′ 9″	0′	Pump taken out	0
1100′ S. W. Sutro Forest Line, along Corbett Road, 100′ N. W. Corbett Road	Arata (Tenant Sutro Est)	570	530′	10′ sq.	15′	Flowing	Hall 3″x6″	500
E. side of Corbett Road, 400′ N. Ocean Ave.	Sutro Est.	585	253′	10″ or 12″	300′	100′	5″x18″ Single	25,000
E. Corbett Road, 300′ N. Ocean Ave.	J. Varni	586	252′	5′ sq. Wooden	35′	....	....	1,000

Lobos Creek District

Present yield 766,436 gallons per day from 14 wells, or an average yield per well of nearly 6,500 gallons per day.

One sump of the Park Water Works has a yield of 577,000 gallons per day.

16	Test Holes—Twin Peaks
16	Wells not in use
14	Wells in use
1	Sump in use
47	Wells, Test Holes and sump

WELL RECORD

LOBOS CREEK DISTRICT

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
Twin Peaks Tunnel Test Holes	(Nos. 24 to 39, incl., in this report numbered 23 to 31, 31a to 31g, incl., are a series of test holes along the line of the proposed Twin Peaks Tunnel, commencing at Twin Peaks and extending to the westerly portal of the proposed Twin Peaks Tunnel.) (See logs Lobos District.) (Nos. 1 to 23, incl., in this report numbered 23a to 23w, inclusive, extending from Valencia and McCoppin Sts. to Danvers St.) (On Twin Peaks.) (See logs Mission Creek District.)							
Bet. Geary and Clement, 32nd and 33rd Aves.	Ruhland	32	202′	6′ dia.	80′	50′	(Abandoned for 17 yrs.)	
Lincoln Park, Lake St. and 33rd Ave., about 20′ above 33rd Ave., 200′ W. of 33rd Ave. in line of Lake St.	Old French Cemetery	33-a	220′	Brick lined	100′	48′	....	2,000
300′ W. of 33rd Ave. and in Lake St. produced	Old German Cemetery	33-b	230′	12″	90′	75′	....	....
200′ W. of 33rd Ave., 200′ N. of Lake St.	Old German Cemetery	33-c	250′	12″	90′	....	....	....
100′ W. of 33rd Ave. and 100′ S. of Lake St.	Italian Cemetery	33-d	215′	12″	100′	Windmill disconnected.		
E, side 26th Ave., bet. Geary and Anza Sts.	Kenney	34	150′	Dug 6′ sq.	74′	60′	D.W. 4″x6″	800
28th and California St., S. E. Cor	Lagomarsino	35-a, 35-b	130′	....	130′	(Used to supply vegetable gardens. Had 2 deep well pumps. Abandoned about 1905 and covered over when land was graded.)		
27th Ave., N. of California St	Lagomarsino	35-c	125′	....	130′			
30th Ave. and California	Lagomarsino	35-d	164′	....	....			
N. side Anza, bet. 5th and 6th Aves.	French Hospital	36	176′	22″	154′	26′	Surface 7″x10½″	80,000
		(Note: In test 100,000 gals. per day lowered surface 18″.)						

WELL RECORD

LOBOS CREEK DISTRICT

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
N. side California St., bet. Maple and Cherry Sts.	Hahnemann Hospital	37	225′	10″	105′	32′	(Pump and tank not yet installed.)	
California St., bet. Maple and Cherry Sts.	Children's Hospital	38	220′	....	67′	(No water.)		
No. 3654 Sacramento St., bet. Locust and Spruce	Mme. Loustan	39	262′	10″ and 8″	118′	34′	....	5,000
E. side Parker, bet. Geary and Euclid Ave.	Laurel Hill Cemetery	40	207′	16″	160′	25′	D. W. 6″x24″	70,000 for 2 wells 6 mos. in year
“ “	“ “	40-a	....	16″	160′	25′	....	
Parker Ave., bet. Euclid Ave. and Geary Sts.	Odd Fellows Cemetery	41	205′	16″	185′	20′	EvansD.W.	7,000
California St., near Locust Ave.	Ferries & Cliff Ry. Co.	42	255′	(Steam drilled well, depth unknown, probably about 200′ Drilled for fully a month. Abandoned on account of lack of water.)				
S. E. Cor. St. Rose Ave. and Collins St.	Calvary Cemetery	43	245′	16″	134′	15′	D. W. Small 4″x12″	2,000
N. side Lake St., bet. 3rd and 4th.	Little Sisters of the Poor	44	183′	12″	120′	....	D. W. 4″x20″	5,000
7th Ave. and Lake St.	Maria Kip Orphanage	45	180′	10″	100′	....	GouldD.W. 4½″x10″	2,500

WELL RECORD

LOBOS CREEK DISTRICT

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
N. E. Cor. Lake St. and 15th Ave..	S. F. Nursery for Homeless Children........	46	140′	4½″	62′	18′	Gould D.W. 3″x6″	3,500
No. 358 8th St., bet. Geary and Clement Sts..................	John Griely..........	47	172′	6′ sq.	60′	40′	D.W. 4″x6″	1,400
E. side 33rd Ave., bet. California and Clement................	United Railroads......	32-a	200′	6″	65′	....	No pump (abandoned)	
2 Springs in Sutro Forest, bet. Stations 53 and 54 of Twin Peaks Tunnel Survey, 150′ E. of line, one bet. Stations 54 and 55, 150′ E........................	Sutro Estate.........	320	540′					36
				(Combined capacity of 2 springs 1½ gals. per hour, meas. Mar. 13, by Reidy.)				
In Sutro Forest at Keeper's house on road extending from Clarendon Ave. to Relief Home Pumps at top of ridge...............	Sutro Estate.........	321	540′	4′ sq.	30′	14′	Surface 3″x14″	200
		321-a	620′	4′ sq.	58′	(Now abandoned)		
200′ N. on Lincoln, opp. 13th Ave., Park Water Works...........	City................	323	189′	Sump W. 150′x12′x21′ E. 200′x12′x21′ N. branch at east end of E. sump 60′x12′x21′		9′	Horiz. 6½″x24″ 2 double pumps 2 Vertical 7½″x15″	577,000
In Presidio, East bank of Mountain Lake, opp. 11th Ave......	U. S................	324	140′	Brick lining	110′	5′	(Not now in use.)	

WELL RECORD

LOBOS CREEK DISTRICT

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
National Cemetery Presidio......	U. S. Govt.............	610	215′	10″	60′	....	....	10,000
Relief Home Tract, abt. 600′ S. E. of Lake Honda...............	City.................	611	About 385′	8″ and 10″	About 50′	About 22′	Surface Triplex 7″x10″	
		(Note:—These wells originally flowed but casings are now in such poor condition that the yield of the wells is practically nothing.)						

Notes from Mr. Degen, Supt. of Construction, U. S. Quartermaster's Department, Fort Mason:

WATER SUPPLY FOR MILITARY RESERVATIONS—PRESIDIO, FORT MASON AND FORT MILEY

The main supply for the Presidio and the surrounding Forts is indirectly secured from Lobos Creek.

Lobos Creek is first noticed as a seepage at 14th Avenue. At 16th Avenue there is a flow of 110,000 gallons per 24 hours. At 18th Avenue 226,000; at 19th Avenue 643,000; at 20th Avenue 1,049,000; at 21st Avenue 1,663,000; at 22nd Avenue 1,930,000; at 24th Avenue 2,220,000; at the dam near the coast 2,250,000.

These measurements were taken some six or seven years ago and remain somewhere near constant, as shown by various measurements taken since then.

The Government has installed a temporary dam on Lobos Creek about 300 yards from tide water and at this point they have also installed a modern pumping plant. The old pumping plant at the Marine Hospital has been abandoned.

According to an agreement with the Spring Valley Water Company, the Government is allowed to use only one-half the flow of Lobos Creek at any time. This is entirely insufficient. The daily consumption is now 1,150,000 gallons. They are now pumping 1,100,000 gallons per day. The plant is good for more than this, but that is all they are allowed to take from the Creek.

The Government is now trying to make arrangements with the Spring Valley Water Company whereby the entire flow of the Creek can be appropriated.

The flow of the Creek varys as much as 225,000 gallons per day between the wet and dry seasons. The water from the pumping plant passes through four filters, two of wooden construction and two of reinforced concrete with 15′ diameter and 17′ 6″ diameter respectively. The filtering material is a layer of sand about 3½ to 4 feet in thickness. The water is also treated with an alum solution.

The capacity of these tanks is 500,000 gallons per 24 hours for the small filters and 650,000 gallons for the large ones. These filters require washing once a day and during the rainy season sometimes twice, depending upon the condition of the water. The amount of water required to wash and clean each filter varies from three to five thousand gallons. The plant is operated by two 115 H. P. engines, double acting pumps, each with a capacity of 60,000 gallons per hour. The water on leaving the pumping plant passes directly into a 6,000,000 gallon distributing reservoir from which an 8″ main leads along Bay Street to Fort Mason and the transport docks.

The supply for the Presidio proper is retained in a 480,000 gallon reservoir at elevation 165′

Fort Winfield Scott is supplied from a 140,000 gallon reservoir which is fed through a 12-inch main operated by means of a float valve. From this reservoir, one 10-inch and two 6-inch mains lead to the Artillery Post at Fort Scott.

The Hulbert is a new reservoir and supplied directly from the main 6,000,000 gallon reservoir and is used only for storage, except in case of urgent necessity.

Alcatraz Island has a local supply of about 50,000 gallons per day, mostly from springs, there being only one or two wells from the serpentine formation which do not supply any amount of water to speak of.

The same is true of Angel Island, where the local supply amounts to 60,000 gallons per day.

Fort Baker's local supply is practically nothing.

All of the three above named places receive their supply from the main land, it coming through the Filtration Works on Lobos Creek.

Fort Miley at present, receives its supply from the Spring Valley Water Company but the Government is intending to sink wells and install a pumping plant later on.

WELL RECORD

LOBOS CREEK DISTRICT

From a superficial examination, it appears that 90 per cent of the flow of Lobos Creek comes from the South or Richmond District side, most of it between 19th and 21st Avenues. On the North side of Lobos Creek, about 300 feet North of the present pumping station, there was an old lake which has not been noticed for the last 20 years and a reservoir located at this point, showed there was an enormous underground flow amounting to 600,000 gallons a day.

This at present flows along on a clay sub-soil directly under the surface and wastes into the sea. The stream, according to old residents of the district, used to empty into the lake previously mentioned and was of a very constant flow the year round. From observation, this flow is found to be very close to the known fault line.

The original post at the Presidio was supplied from wells sunk through the bottom of an old tunnel. These were always deficient and have long since been abandoned.

The National Cemetery receives its supply of 10,000 gallons per day from a 10-inch driven well, 60 feet deep, operated by a windmill. The well is probably 20 years old and no log of it has been kept.

MOUNTAIN LAKE: The water in Mountain Lake is of a very poor quality and could not be used for domestic purposes, however, it was used for a short time after the earthquake in 1906. This source has not been used since the new plant has been constructed at the mouth of Lobos Creek.

Around the rim of the lake, there are altogether about 40 wells. 12 large dug wells and 28 driven wells that have been abandoned for many years.

There is one well at Mountain Lake at the present time with 9 foot interior diameter, concrete casing, 110′ deep, the log of which we have on file in the office. There was an old well located under the present pumping plant on Lobos Creek. This well brought up on hard pan at a depth of 55′, gave practically no supply. (See wells No. 324 and 545 of this report.)

The Superintendent of the pumping plant says that during several years, they tried pumping direct from Mountain Lake for irrigation and watering lawns. It is found that withdrawing thirty to forty thousand gallons per day from this lake, left practically nothing at the end of the season, showing that the inflowing supply is very small and very slow and altogether dependent upon the rainy season, drainage being mostly off the Golf Links and a small portion of the Richmond District.

The maximum amount pumped from the 40 wells (or rather the 12 large ones since the 28 smaller ones were abandoned) was 200,000 gallons per day.

LOCATION	OWNER	Number	Elevation	Size	Depth	Depth to Water	Pump — Size	Present Yield — Gals. per 24 Hrs.
S. W. Cor. Pumping Station, Lobos Creek......................	U. S. Government.....	545	25′	16-1/16″	55½′	Surface	6″x8″ Blake	(Test well)

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253a	122	Estate of Claus Spreckels—Van Ness Ave. and Clay St	" "
257	122	Hale Bros. (old well) Market near 6th St	" "
259a-b	123	National Ice Co.—Langton St., bet. Bryant and HarrisonSts	" "
260	123	Brannan St., near 7th St	" "
264	129	Hammam Baths—Ellis St. near Mason	" "
265	130	Commercial Bldg.—Jessie and 4th Sts	" "
270	130	Pacific Hebrew Orphan Asylum—Grove, Hayes, Scott and Divisadero Sts	" "
271a 279	127	Christian Science Church—Sacramento and Scott Sts. (4 wells, 1, 2, 3 and 4)	" "
277	127	Merced Dairy—Broderick, N. of Post St	" "
278	127	Palace Laundry Co.—Post and Divisadero Sts	" "
279	126	Riverdale Creamery, Divisadero, N. of O'Farrell St	" "
281	126	Bedecarrat Laundry—Divisadero, S. of Ellis	" "
282	126	Lang Bros.—S. side O'Farrell, W. of Webster	" "
283	126	Under La Boheme Cafe—Ellis, W. of Webster	" "
286	126	S. F. Laundry Assn.—Eddy St., E. of Steiner	" "
288	130	120′ N. side Turk St., 150′ W. of Fillmore	" "
289	126	National Brewery—Fulton and Webster Sts	" "
290	126	National Brewery—Fulton and Webster Sts	" "
291	126	Cerciat Lace House Laundry—McAllister St. near Buchanan	" "
292	126	Standard Shirt Factory—Grove and Gough Sts	" "
293-1	123	City Hall site—Test Hole No. 1	" "
293-2	124	City Hall site—Test Hole No. 2	" "
293-3	124A	City Hall site—Test Hole No. 3	" "
293-4	124A	City Hall site—Test Hole No. 4	" "
293-5	124A	City Hall site—Test Hole No. 5	" "
293-6	124A	City Hall site—Test Hole No. 6	" "
293-7	124	City Hall site—Test Hole No. 7	" "
293-8	124	City Hall site—Test Hole No. 8	" "
293-9	124	City Hall site—Test Hole No. 9	" "
293-10	124	City Hall site—Test Hole No. 10	" "
294-1	125	Auditorium Site—Test Hole No. 1	" "
294-2	125	Auditorium Site—Test Hole No. 2	" "
294-4	125	Auditorium Site—Test Hole No. 4	" "
294-5	125	Auditorium Site—Test Hole No. 5.—	" "
294-6	125	Auditorium Site—Test Hole No. 6	" "
294-7	125	Auditorium Site—Test Hole No. 7	" "
294-9	125	Auditorium Site—Test Hole No. 9	" "
294-10	125	Auditorium Site—Test Hole No. 10	" "
294-13	126	Auditorium Site—Test Hole No. 13	" "
294-14	126	Auditorium Site—Test Hole No. 14	" "
294-15	126	Auditorium Site—Test Hole No. 15	" "
295	132	Mt. Zion Hospital—Post St., W. of Scott St	" "
298	127	Milwaukee Brewery—10th St., bet. Bryant and Harrison Sts	" "
299	132	S. E. Cor. 11th and Folsom Sts	" "

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315	111	75′ S. Lombard St., 120′ E. of Gough	" "
316	112	Bet. Webster and Fillmore Sts., Chestnut and Francisco Sts.	" "
321	119	Sutro Forest Keeper's House on road from Clarendon Ave. to Relief Home	Lobos Creek
322	119	50′ N. Palo Alto Ave., 150′ E. of Stanyan St.	" "
329	130	S. 19th St., bet. Carolina and Wisconsin Sts.	Mission Creek
331	130	S. E. Cor. Wisconsin and 16th Sts.	" "
333	113	W. Arkansas St., bet. 20th and 22nd Sts.	Islais Creek
335	113	E. Indiana St., bet. 22nd and 23rd Sts.	" "
336	113	S. side 22nd St., bet. Illinois and Michigan	" "
337	113	S. E. Cor. Humboldt and Louisiana Sts.	" "
338b	113	West Minnesota St., bet. 23rd and 25th Sts.	" "
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339a	114	N. Army St., N. E. from Hampshire St.	" "
347	114	S. E. Cor. San Bruno Ave. and Army St.	" "
349	114	S. E. Cor. Army and De Haro Sts.	" "
351	113	Arthur and Railroad Aves.	" "
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358	115	N. E. Cor. Evans and Railroad Ave.	" "
359	113	N. side Evans, bet. Railroad Ave. and Newhall St.	" "
360	114	S. Jerrold Ave., bet. Quint and Phelps Sts.	" "
360a	114	S. Jerrold Ave., bet. Quint and Phelps Sts.	" "
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386	109	N. W. Cor. Felton and Colby Sts.	" "
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394	115	N. E. Cor. Ney and Congdon Sts.	" "
395	115	S. Maynard, bet. Grant and Congdon Sts.	" "
396	116	N. Silver Ave., bet. Grant and Congdon Sts.	" "
397	116	S. side Silver Ave., bet. Lisbon and Madrid	" "
399	115	N. E. Cor. Silver Ave. and Mission St.	" "
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402	116	E. side Mansfield, bet. Burrows and Felton Sts.	" "
403	115	W. Knox, bet. Felton and Burrows Sts.	Islais Creek
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417	109	S. E. Felton and Bowdoin	" "
418	109	S. E. Felton and Holyoke	" "
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438	109	N. W. Williams Ave. and Apollo St.	“ “
441	110	Carroll Ave., 400′ S. E. of Phelps	“ “
451	110	S. W. quarter of Western Development Co. Tract	“ “
461	110	W. Cor. Meade and Railroad Ave	“ “
463	110	N. Gilman Ave., bet. Hawes and Griffith	“ “
465	110	Bancroft Ave., bet. Keith and Jennings	“ “
467	110	N. Cor. Armstrong and Keith Ave	“ “
470	110	S. Thomas Ave., bet. Keith and Jennings	“ “
471b	110	N. Palou Ave., bet. Jennings and Ingalls Sts	“ “
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494	116	S. W. Cor. Mission and Mohawk Sts	“ “
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526	117	W. Prague, bet. Excelsior and Brazil	“ “
531	117	W. side Athens, bet. Peru and Madison	“ “
532	117	N. E. Cor. Peru and Athens	“ “
533	117	S. W. Cor. Forester St. and Joost Ave	“ “
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Logs of San Francisco Wells.

BAY VIEW DISTRICT

No. 384
Elev. 82
Location: N. E. Cor. Goettingen St. and Felton St., 50′ on Felton from Goettingen.
0— 3 Sand.
3— 7 Hard pan.
7— 26 Sand.
26— 57 Blue clay.
57— 64 Gravel.

No. 386
Elev. 149
Location: N. W. Cor. Felton and Colby Sts.
0— 30 Sand and clay mixed.
30— 60 Loose yellow rock.

No. 405
Elev. 230
Location: S. E. Cor. Cambridge and Silliman Sts.
0— 8 Black sand.
8— 15 Blue clay.
15— 32 Red sand.
32 Rock.

No. 410
Elev. 320
Location: W. Cambridge, between Dwight and Olmstead Sts.
0— 5 Loam.
5— 12 Yellow sand.
12— 12½ Blue clay.
12½— 13½ Yellow clay.
13½— 20 Sandy clay with some loose rock.

No. 414
Elev. 175
Location: S. E. Amherst and Wayland Sts.
0— 20 Sand.
20— 55 Red rock.

No. 417
Elev. 114
Location: S. E. Felton St. and Bowdoin, 75′ on Bowdoin, 60′ in.
0— 10 Sand.
10— 13 Hard pan.
13— 25 Clay.

No. 418
Elev. 97
Location: S. E. Cor. Felton and Holyoke Sts.
0— 20 Loam.
20— 22 Soft layer of sand.
22— 60 Sandy clay.
60— 83 Quick sand.
83 Blue rock.

No. 420
Elev. 90
Location: W. Somerset, bet. Wayland and Woolsey—100′ on Wayland 10′ in.
0— 8 Yellow sand.
8— 15 Blue clay.
15— 75 Yellow sand clay.
75 Rock.

No. 426
Elev. 370
Location: N. E. Cor. Mansell and University.
0— 35 Sandy clay.
35— 67 Rock (yellow).

No. 429
Elev. 150
Location: N. W. Cor. Dwight St. and Goettingen (100′ on Dwight, 5′ in.)
0— 30 Yellow rocky clay.

No. 432
Elev. 35
Location: E. Side Charter Oak, Cor. Phelps St.
0— 7 Sand.
7— 40 Hard sandy clay.

No. 433
Elev. 65
Location: W. Charter Oak, bet. Bacon and Burrows.
0— 60 Sand.
— 60 Sandy clay.

No. 435
Elev. 30
Location: N. Carroll Ave., bet. Quint and Phelps Sts.
0— 80 Sand.
— 80 Rocky clay.

No. 436
Elev. 60
Location: N. E. Cor. Thornton Ave. and Waterville St.
0—100 Sandy clay.
At 100 Blue clay.

No. 438
Elev. 60
Location: N. W. Williams Ave and Apollo St., 150′ on Apollo, 10′ in.
0—105 Clay and sand.

LOGS OF SAN FRANCISCO WELLS

BAY VIEW DISTRICT

No. 441
Elev. 16
Location: Carroll Ave. about 400′ S. E. of Phelps.
0— 10 Sand.
10— 25 Clay (yellow).
25—125 Sandy clay.

No. 451
Elev. 45
Location: S. W. ¼ of Western Development Co.'s Tract.
0—102 Sand and little clay.
102 Rock.

No. 461
Elev. 115
Location: W. Cor. Meade and Railroad Ave.
0— 7 Black loam.
7— 14 Yellow clay.
14— 16 Gravel.

No. 463
Elev. 10
Location: N. Gilman Ave. bet. Hawes and Griffith St., 300′ from Griffith.
0— 3 Black loam.
3— 8 Sandy clay.
8— 25 Shell or loose rock mixed with sand—rock at 25.

No. 470
Elev. 21
Location: S. Thomas Ave., bet. Keith and Jennings Sts., 150′ from Jennings.
0— 6 Doby.
6— 32 Sand—Clay at 32.

No. 471-b
Elev. 108
Location: N. Palou Ave., bet. Jennings and Ingalls St.
0— 20 Yellow Clay.
20— 40 Soft yellow rock.
40— 70 Black slate rock.

No. 472
Elev. 165
Location: N. Newcomb Ave., bet. Lane and Keith Sts.
0— 2 Loam.
2— 28 Blue rock.

No. 474
Elev. 164
Location: N. Oakdale Ave., bet. Keith and Jennings Sts.
0— 27 Solid rock.

No. 465
Elev. 5
Location: Bancroft Ave., bet. Keith and Jennings Sts.
0— 20 Black loam.
20— 50 Yellow clay.
50—100 Sand.
100—126 Black clay.

No. 467
Elev. 8
Location: N. Cor. Armstrong and Keith Ave.
140 Rock.

HARBOR VIEW DISTRICT

No. 1
Elev. 168
Location: Jerome Garage Co., N. W. Cor. Jackson and Polk.
0— 30 Dry sand.
30— 40 Yellow clay.
40— 55 Sand.
55— 63 Yellow clay.
63— 72 Hard sand.
72— 81 Yellow clay.
81— 92 Water sand.
92—110 Yellow clay and rotten rock.

No. 6
Elev. 3
Location: Wunder Brewery—Lombard and Scott Sts. (Exact location unknown.)
Test hole—62 ft. to rock.

No. 8
Elev. 24
Location: Golden Gate Steam Laundry, 75′ N. Lombard, bet. Fillmore and Steiner.
0— 14 Sand.
14— 22 Sandy clay.
22— 40 Sand.
40— 55 Sandy clay.
55— 72 Blue clay.
72— 83 Sand.
83—118 Sandy clay.
118—124 Sand and broken rock.
124—129 Sandy clay.
129—143 Sand.
143—180 Hard clay.
180—192 Clay and rotten rock.
192—227′ 7″ Rotten rock.

LOGS OF SAN FRANCISCO WELLS

HARBOR VIEW DISTRICT

No. 8-a
Elev. 24
Location: G. G. Steam Laundry, N. Lombard, bet. Fillmore and Steiner Sts.

0— 12	Sand.
12— 20	Sandy clay.
20— 38	Sand.
38— 54	Sandy clay.
54— 70	Blue clay.
70— 81	Sand.
81—116	Sandy clay.
116—123	Indurated sand.
123—127	Sandy clay.
127—146	Sand.
146—170	Clay.

No. 315
Elev. 47
Location: 75′ S Lombard, 120′ E. of Gough.

0— 50	Sandy loam.
50— 55	Hard pan.
55— 58	Gravel.

No. 309
Elev. 3
Location: Pacific Cereal Assn., North Beach, Taylor and Bay.

0— 34	Blue mud.
50	Yellow sandy clay.
60	Yellow water sand.
65	Blue water sand.
85	Blue clay.
87	Yellow sand and gravel.
116	Blue sandy clay.

Test Wells or Borings—Fillmore Street Tunnel.

No. 551
Hole No. 1
Elev. 148
Location: N. W. Cor. Bush and Fillmore Sts.

0— 4	Sandy filling.
4— 9	Sandy yellow clay.
9— 33	Red sandy clay fading to lighter sandy clay at 22′ resembling a very soft sand rock.
33— 36	Very soft sand rock.

No. 552
Hole No. 2
Elev. 160
Location: S. E. Cor. Pine and Fillmore Sts.

0— 4	Gray sand—at 4 red clayey sand.
4— 20	Red, sandy clay—struck water in light sand, water seam about 3′ through, although ground beneath is wetter.
20— 42	Sandy clay—wet.
42— 50	Stiff clay, small pieces of rock.
At 50	Rotten rock.

No. 553
Hole No. 3
Elev. 164
Location: S. E. Cor. California and Fillmore Sts.

0— 11	Sand.
11— 14	Black clay.
14— 17	Yellow sandy clay.
17— 26	Sand and sandy clay.
26— 54	Stiff clay and rotten rock merging into sandy clay.
54— 67	Solid sand or soft sand rock.

No. 554
Hole No. 4
Elev. 184
Location: S. E. Cor. Sacramento and Fillmore Sts.

0— 17	Sand.
17— 25	Clay mixed with some sand.
25— 31	Sand water bearing with small amount of clay.
31— 49	Sandy clay—water soaked.
49— 66	Clay stiff.
66— 89	Clay and sand—seems to be dry clay—no water.
89— 93	Stiff clay.

No. 555
Hole No. 5
Elev. 194
Location: S. E. Cor. Clay and Fillmore Sts.

0— 20	Dry sand bearing water at El. 176.
20— 24	Stiff blue clay.
24— 66	Stiff clay with coarse sand at 170 El. dry, but seems somewhat softer at 148 El. At 144 some sandy clay brighter yellow.
66— 73	Same stiff sandy clay.
73— 82	Stiff sticky yellow clay.
82— 94	Clay and blue sand. Sandy blue clay.
94—102	Sand with some clay—yellow.
102—115	Stiff blue clay.

Test Wells or Borings—Fillmore Street Tunnel.

No. 556
Hole No. 6
Elev. 214
Location: S. E. Cor. Washington and Fillmore Sts.
0— 5 Sand.
5— 12 Clay—little sand.
12— 18 Sandy clay.
18— 43 Soft sand rock—water bearing.
43— 65 Sandy clay.
65— 76 Stiff clay.
76— 84 Stiff dry clay like rotten rock.

No. 557
Hole No. 7
Elev. 235
Location: S. E. Cor. Jackson and Fillmore Sts.
0— 8 Sand.
8— 11 Reddish, black clay.
11— 32 Sandy, yellow clay.
32— 38 Soft sand rock.
38— 43 Sandy clay.
43— 50 Sandy clay or rotten rock—3″ drill would not go any further.

No. 558
Hole No. 8
Elev. 242
Location: S. E. Cor. Pacific and Fillmore Sts.
0— 4 Sand.
4— 8 Clay, reddish black.
8— 25 Sandy clay, reddish.
25— 34 Sand, water bearing.
34— 40 Sandy clay—red.
40— 49 Sand rock, soft.
49— 60 Sandy clay, gray.
60— 63 Blue clay or soft shale.

No. 559
Hole No. 9
Elev. 236
Location: S. E. Cor. Broadway and Fillmore Sts.
0— 10 Sandy clay.
10— 23 Stiff yellow clay. At 23 struck disintegrated rock, drill would go no deeper.

No. 560
Hole No. 10
Elev. 100
Location: N. W. Cor. Green and Fillmore Sts.
0— 10 Sandy clay for few feet.
10— 24 Sand with clay.
24— 35 Stiff blue clay, merging into rotten rock.

No. 561
Hole No. 11
Elev. 60
Location: S. E. Cor. Union and Fillmore Sts.
0— 4 Blue clay.
4— 18 Sandy clay—no water.
18— 23 Stiff clay.

No. 562
Hole No. 12
Elev. 50
Location: W. side Fillmore, half way bet. Union and Filbert Sts.
0— 5 Blue clay.
5— 12 Yellow clay—stiff.
12— 27 Sandy clay.

No. 563
Hole No. 13
Elev. 37
Location: S. E. Cor. Filbert and Fillmore Sts.
0— 7 Clay.
7— 18 Soft sand rock–water.
18— 20 Soft sand rock–water.

No. 564
Hole No. 14
Elev. 154
Location: S. E. Cor. Fillmore and Wilmot Sts.
0— 39 Red sandy clay, little seepage at El. 126.
39— 41 Red clay containing decomposed rock.
41— 43 Yellow clay (perfectly dry). Drill will hardly cut ground so hard.

No. 565
Hole No. 15
Elev. 137
Location: E. side Fillmore, bet. Sutter and Bush Sts.
0— 13 Red sandy clay.
13— 22 Grey sand and clay, more sand than clay, struck water at 22.

No. 566
Hole No. 16
Elev. 126
Location: N. W. Cor. Sutter and Fillmore Sts.
0— 18 Red, sandy clay.
18— 21 Sandy clay.

No. 316
Elev. 23
Location: Bet. Webster and Fillmore–Chestnut and Francisco Sts.
0— 30 Drift sand.
30— 35 Mud.
35—140 Sand.
140—150 Blue clay.
150—160 Water gravel.

LOGS OF SAN FRANCISCO WELLS

ISLAIS CREEK DISTRICT

No. 333
Elev. 220
Location: W. Arkansas, bet. 20th and 22nd Sts., 250′ from 20th.
0— 50 Limestone and iron rock mixed.

No. 337
Elev. 15
Location: S. E. Cor. Humboldt and Louisiana Sts.
0— 2 Loam.
2—500 Blue serpentine.

No. 335
Elev. 18
Location: E. Indiana, bet. 22nd and 23rd—about center of the block.
0— 3 Loam.
3— 11 Blue clay.
11— 27 Sandy clay.
27— 28 Quicksand.

No. 336
Elev. 26
Location: S. side 22nd, bet. Illinois and Michigan—100′ from Illinois.
0— 20 Blue serpentine.

No. 338b
Elev. 16
Location: West Minnesota, bet. 23rd and 25th—about the middle.
0— 10 Loam.
10— 43 Yellow clay.
43— 58 Yellow clay and hard pan.
58— 70 Blue clay.
70— 80 Shell rock and gravel.

No. 369
Elev. 167
Location: S. Innes Ave., bet. Keith and Jennings.
0— 14 Rock.

No. 368a
Elev. 157
Location: N. Innes, bet. Keith and Jennings.
0— 40 Rock.

No. 367
Elev. 60
Location: S. Keith St., bet. Galvez and Hudson Aves.
0— 30 Blue rock.

No. 366
Elev. 23
Location: Keith St., bet. Evans and Fairfax Aves., center of the street, 100′ from Fairfax.
0— 4 Loose rock.
4— 80 Solid blue rock.

No. 365
Elev. 22
Location: S. Evans Ave., bet. Lane and Keith Sts., 300′ from Lane, 10′ in.
0—280 Blue serpentine—very poor water strata.

No. 364
Elev. 4
Location: Davidson Ave., bet. Mendell and Lane Sts.
Rock from top to bottom—75′.

No. 363
Elev. 12
Location: N. side Mendell St., bet. Fairfax and Galvez Aves.
0— 10 Sand.
10— 30 Yellow clay.
30— 84 Soft yellow rock.
84 Bed rock.

No. 359
Elev. 3
Location: N. Evans Ave., bet. Railroad Ave. and Newhall St
0— 12 Mud.
12— 30 Clay.
30— 85 Sand.
85—100 Gravel.
100 Rock.

No. 351
Elev. 0
Location: Arthur and Railroad Aves.
0— 5 Fill.
5— 22 Hard cement.
22— 58 Blue mud.
58— 70 Sand and water.
70— 84 Water sand.
84— 87 Blue clay.
87— 90 Rock.

LOGS OF SAN FRANCISCO WELLS

ISLAIS CREEK DISTRICT

No. 356
Elev. 1
Location: N. E. Fairfax Ave., bet. Quint and Phelps Sts.
0— 45 Blue clay.
45— 80 Water bearing sand.
80— 95 Clay.

No. 352a
Elev. 0.5′
Location: California Glue Works, N. E. Rankin St. and Fairfax Ave.
0— 6 Filled ground.
6— 52 Blue mud.
52— 67 Fine sand—water.
67— 96 Blue clay.
96—108 Water bearing sand.
108—130 Clay.
130—150 Water bearing sand.
150—155 Clay.
155—164 Water bearing sand.
164—192 Clay and rotten rock.

No. 360a
Elev. 5
Location: S. Jerrold Ave., bet. Quint and Phelps Sts.
0— 8 Filled ground.
8— 13 Shell.
13— 26 Sand and clay in layers.
26— 32 Water bearing sand.
32— 35 Hard brown clay.
35— 64 Water bearing sand.
64— 65 Hard red clay.
65— 72 Water bearing sand.
72 Hard blue clay.

No. 360
Elev. 5
Location: S. Jerrold Ave., bet. Quint and Phelps Sts., 100′ from Quint.
0— 6 Filled ground.
6— 16 Blue clay.
16— 24 Yellow sand and clay.
24— 38 Quicksand.

No. 349
Elev. 23
Location: S. E. Cor. Army and De Haro Sts.
0— 25 Rock all over.

No. 347
Elev. 12
Location: S. E. Cor. San Bruno Ave. and Army St.
0— 35 Blue clay.
35— 40 Yellow clay.
40— 55 Yellow sand.
55— 57 Yellow clay.
57— 74 Sand.
74— 86 Gravel.
86 Rock.

No. 339
Elev. 29
Location: 25th and Potrero Ave., 100′ S. of 25th, 25′ in.
Clay from top to bedrock 90′. Intervening small strata of quicksand and gravel containing water bearing sands.

No. 339a
Elev. 5
Location: N. Army St., 300′ N. E. from Hampshire St.
0— 20 Mud.
20— 40 Gravel and sand.
40 Bed rock.

No. 379
Elev. 67
Location: Silver Ave., S. side, bet. Charter Oak and Ledyard Sts., 100′ from Charter Oak.
0— 42 Yellow clay.
No rock.

No. 378
Elev. 59
Location: W. San Bruno Ave., bet. Hale and Silver Ave., 80′ on Hale from San Bruno Ave.
0— 4 Sand.
4— 94 Clay and sand.
94—100 Blue clay.

No. 380
Elev. 72
Location: S. W. Cor. Silver Ave. and Goettingen, 60′ on Silver from Goettingen.
0— 45 Sand—no water.
45 Water bearing sand.
45—100 Yellow clay.

No. 376
Elev. 144
Location: E. of Prentiss, bet. Jarboe and Tompkins—100′ N. from Tompkins.
0— 6 Loam.
6— 22 Rock.

No. 401
Elev. 340
Location: E. side Madison, bet. Felton and Silliman, 100′ from Silliman, 25′ in.
0— 12 Clay.
12— 28 Rock.

LOGS OF SAN FRANCISCO WELLS

ISLAIS CREEK DISTRICT

No. 403
Elev. 400
Location: W. Knox, bet. Felton and Burrows, 100′ from Burrows.
0— 20 Sand.
20— 36 Rock.
36 Water bearing gravel and sand.

No. 388
Elev. 375
Location: E 23 Athens, bet. Madison and Peru, 150′ from Madison.
0— 12 Clay and loose rock.
12— 45 Solid rock.

No. 389
Elev. 368
Location: W. Athens 34, bet. Peru and Madision, 100′ from Madison and 50′ in.
0— 1 Clay.
1— 45 Rock.

No. 390
Elev. 250
Location: E. Naples St., bet. Silver Ave and Peru, 300′ from Silver.
0— 2 Clay.
2— 30 Rock.

No. 394
Elev. 120
Location: N. E. Cor. of Ney and Congdon, 90′ from Ney, 20′ from Congdon.
0— 70 Sandy loam.
70 Rock.

No. 395
Elev. 154
Location: S. Maynard, bet. Grant and Congdon, 150′ from Congdon, 70′ in.
0— 30 Yellow clay.
30 Water bearing sand.

No. 399
Elev. 152
Location: N. E. Cor. Silver Ave. and Mission St., 180′ in.
0— 63 Sand.
63 Rock.

No. 358
Elev. 2
Location: N. E. Evans and Railroad Ave.
0— 12 Black mud.
12— 30 Yellow Clay.
30—100 Sand.
100 Rock

No. 13
Elev. 225
Location: Crocker Tract, Munich and Amazon Sts.
Well No. 8
About 30′ to rock.

No. 14
Elev. 242
Location: Crocker Tract, Munich and Amazon Sts.
Well No. 1
200′ deep to blue clay.

No. 15
Elev. 320
Location: Crocker Tract, Mission St., West of Acton.
(Crocker Track Water System.)
200′ deep to bedrock.

No. 17
Elev. 144
(Level with Onondaga Ave.)
Location: Onondaga, near Cayuga Ave. (Poultry Ranch).
0— 48 Sand.
Through one hardpan.
— 48 Quick sand.

No. 20
Elev. 166
Location: N. Cor. Mission and Bauer, 75′ rear of Mission.
0— 67 Sand.
67 Struck hard material.

No. 149
Elev. 74 (2′ below San Jose Ave.)
Location: Townsend's, 121 San Jose Ave., 23rd and 24th Sts.

No. 150
Elev. 80
Location: St. Luke's Hospital, S. side of Army St., bet. Valencia and San Jose Ave.
0—100 Clay, gravel, sand, etc. (called "till").
208 Green porphyry.

No. 372
Elev. 107
Location: Nevada St., bet. Cortland and Powhattan Ave.
0— 20 Soil.
20— 50 Rock.

ISLAIS CREEK DISTRICT

No. 374
Elev. 112
Location: Cortland Ave. and Bradford St., N. E. Cor.
0— 20 Soil.
20— 45 Rock.

No. 375
Elev. 50
Location: S. E. Cor. Cortland Ave., bet. Peralta Ave and Bradford, 30′ from Peralta.
Rock at 60′.

No. 396
Elev. 187
Location: N. Silver Ave., bet. Graut and Congdon Sts., 200′ from Graut St., 60′ in.
0— 7 Soil.
7— 25 Rock.

No. 397
Elev. 185
Location: S. side Silver Ave., bet. Lisbon and Madrid Sts., 100′ from Lisbon, 60′ in.
0— 12 Soil.
12— 32 Rock.

No. 402
Elev. 185
Location: E. side Mansfield St., bet. Burrows and Felton Sts.
0— 2 Soil.
2— 36 Rock.

No. 486
Elev. 150
Location: 250′ N. Springdale, 50′ S. Rousseau.
30′ to rock.

No. 489
Elev. 130
Location: 110′ N. Tingley, 500′ W. of Mission.
0— 90 Sand.
90 Rock.

No. 490
Elev. 100
Location: Westerly Cor. Springdale and La Martine St.
0—to 10 or 15′ soil covering bed rock.

No. 494
Elev. 178
Location: S. W. Cor. Mission and Mohawk Sts., 50′ S., 50′ W.
0— 5 Sand.
5— 10 Clay.
10—100 Gravel or coarse sand.

No. 504
Elev. 260 Level with Niagara St.
Location: Pachettis Nursery, 250′ E. of Louisburg, 200′ N. Niagara.
0— 92 Black soil.
Red sand.
Clay, dry.
Sand.
Gravel and clay.
92 Rock.
to 95 Rock.

No. 505
Elev. 300 (1′ above board yard, 10′ below Cor. Mt. Vernon and Tara.)
Location: Capt. Smith, 274 Tara St., 90′ N. of Mt. Vernon, 100′ W. Tara.
Loam.
Yellow sand.
Manganese iron strata.
Gray sand.
White sand.
Blue clay.
Rock about 48′.

No. 507
Elev. 345
Location: Wilson's Pump Plant on Majestic Ave., 100′ N. Lake View, 60′ W. Majestic Ave.
0— 58 Sand.
(Indurated in lower.)
58— 60 Manganese ironstone.
94 Sand (grey water), 3 strata.
96 Clay and coarse sand.
103 Rock-rotten sandstone.
Blue sandstone.
(Bet. 60 and 94 3 water strata, one below 60, other above clay and coarse sand.)

No. 508
Elev. 270 Lawrence St. Elev., casing 12″ above .
Location: Lawrence St., bet. San Jose Ave. and Winnipeg.
0— 20 Sand, rock.

No. 514
Elev. 240 (12″ above ground, 8′ below So. Pac.)
Location: Giovanni's Nursery, 100′ W. Huron, 50′ N. Nagle St.
0—132 Sand.

LOGS OF SAN FRANCISCO WELLS

ISLAIS CREEK DISTRICT

No. 523
Elev. 252
Location: S. E. Cor. Persia and Naples.
0—136 Sandy clay.
136 Blue clay.

No. 526
Elev. 378
Location: W. Prague, bet. Excelsior and Brazil, 150′ from Excelsior.
0— 15 Sandy clay.
15— 34 Rock.

No. 531
Elev. 360
Location: W. side Athens, bet. Peru and Madison St., 50′ from Peru.
0— 5 Loam.
5— 70 Rock.

No. 533
Elev 332
Location: S. W. Cor. Forester St. and Joost Ave.
0— 70 Sand.

No. 536
Elev. 380
Location: E. Forester St., bet. 33rd and Melrose Ave., 100′ from 33rd St., 50′ in.
0— 4 Black loam.
4— 20 Yellow clay.
20— 22 Sand.

No. 547
Elev. 88
Location: N. E. Cor. Duncan and San Jose Ave.
0— 21 Yellow sand.
21— 27 Hard yellow clay.
27— 50 Streaks of sand and clay, some water.
50— 70 Blue clay.
70— 75 Hard cement.
75— 80 Water sand.
80— 85 Water sand and broken rock.
85— 97 Broken rock, some water.
97—102 Water sand.
102—110 Water, sand and broken rock.
110—140 Clay, cement and rock in bottom, red shale.

No. 532
Elev. 382
Location: N. E. Cor. Peru and Athens Sts.
0— 80 Rock.

No. 572
Elev. 0
Location: Butchertown, 1st Ave., 300′ from from R. R. Ave.
0— 44 Soft blue mud.
44— 70 Hard blue mud.
70—130 Blue water sand.

No. 612
Elev. 190
Location: N. side Silver Ave., bet. Graut and Congdon St.
0— 6 Clay.
6— 65 Blue rock.

LOBOS DISTRICT

No. 23—Sta. 1 + 56
Elev. 367
Location: Twin Peaks Tunnel.
0— 26 Sand—no water.

No. 24—Sta. 6
Elev. 404
Location: Twin Peaks Tunnel.
0— 7 Sand.
15 Red sand—some clay.
56 Sand.
At 54 Water Elev. 350.

No. 25—Sta. 13
Elev. 452
Location: Twin Peaks Tunnel.
0— 6 Red, sandy clay (very tough).
94 Sand.
At 22–25 Seepage water.
86 Water, El. 366.

No. 26—Sta. 18
Elev. 468
Location: Twin Peaks Tunnel.
0— 20 Red sandy clay.
At 28–31 Little seepage water.
50 Sand.
68 Red, sandy clay.
102 Sand.
At 95 Water—Elev. 373.

No. 27—Sta. 23
Elev. 479
Location: Twin Peaks Tunnel.
0— 18 Red sandy clay.
29 Brown sand, little clay.
31 Clean sharp sand.
62 Red sand.
62½ Stiff yellow clay.
76 Sand, little clay and broken rock.
79 Red, sandy clay.
93 Decomposed rock.
No water.

LOGS OF SAN FRANCISCO WELLS

LOBOS DISTRICT

No. 28—Sta. 28
Elev. 478
Location: Twin Peaks Tunnel.

0—26	Sand.
28	Black sand.
43	Red sand, little clay.
55	Sandy clay.
74	Clean, sharp sand.
80	Stiff clay.
100	Clean, sharp sand.
At 96	Water—Elev. 382.

No. 29—Sta. 33
Elev. 434
Location: Twin Peaks Tunnel—in Relief Home Tract, S. W. side of road, 8″ and 6″.

0— 35	Sandy clay.
35	Water at Elev. 399.
45	Sand.
53	Clay.
55	Sand.

No. 30—Sta. 37 + 50
Elev. 485
Location: (Same as No. 29)

0— 20	Sandy clay.
125	Lightly cemented sand.
At 25	Water—Elev. 460.
	Water flow strongest near the 25′ level.

No. 31—Sta. 43 + 20
Elev. 517
Location: Same as Nos. 29 and 30.

0—135	Lightly cemented sand.
130	Water—Elev. 387.

0— 20	Sand.
135	Lightly cemented sand.
143	Quicksand.
161	Lightly cemented sand.
170	Sand, little broken rock.
130	Water—Elev. 387.

Location of Wells numbered 31A to 31G inclusive is the same as given in No. 29, viz.: Twin Peaks Tunnel, in Relief Home Tract, S. W. side of road, 8″ and 6″.

No. 31A—Sta. 31
Elev. 434

434	Surface.
426	Black sand—water line.
423	Black clay.
419	Blue sandy clay.
411	Yellow sandy clay.
364	Blue sandy clay.

No. 31B—Sta. 46 + 50

433	Surface.
415	Brown sand—seepage.
409	Brown sand (clay).
402	Brown sandy clay.
398	Red sand-rock.
386	Water line.
378	Sand rock.
368	Quicksand.
333	Sand rock.

No. 31C—Sta. 48

435—420	Sandy loam-rock.
414	Red sandy clay.
410	Blue sandy clay.
403	Yellow sandy clay.
395	Yellow sand.
391	Red sand—water line.
360	Sand rock.
345	Sand containing broken rock.
337	Quicksand.
331	Stiff brown clay.
329	Stiff blue clay.
312	Rotten blue rock.
	Blue rock.

No. 31D—Sta. 49 + 35

434	Sandy loam.
417	Brown sandy clay (rocky).
412	Yellow clay—rocky.
396	Water line.
393	Yellow sand.
364	Sand rock.
363	Broken rock in sand.
343	Quicksand.
342	Stiff brown clay.
335	Stiff blue clay.
333	Rotten rock—bed rock.

No. 31E—Sta. 50 + 53

435	Black clay—rocky.
435	Water line.
428	Brown clay, rocky.
419	Yellow clay rocky.
418	Rock.
395	Sand rock.

No. 31F—Sta. 52

457	Sandy loam.
447	Red, sandy clay.
443	Water line.
418	Sand rock (brown).
391	Sandy clay (brown).
361	Sand rock (brown).
357	Stiff brown clay.
346	Stiff blue clay.
340.3	Rotten rock (blue).
	Bed rock.

LOGS OF SAN FRANCISCO WELLS

LOBOS DISTRICT

No. 31G—Sta. 56
493 Red sand.
493 Water line.
487 Brown sand.
478 Blue sand.
476 Rotten rock—blue.
Bed rock.

No. 33B
Elev. 230
Location: Lincoln Park—Lake St. and 33rd Ave., Old German Cemetery, 300′ W. of 33rd Ave. and in Lake produced.
0— 90 Sand to rock.

No. 33C
Elev. About 220
Location: Lincoln Park—Old German Cemetery, 200′ W. of 33rd and 200′ N. of Lake.
0— 90 Sand to rock.

No. 36
Elev. 176
Location: French Hospital, N. side Anza St. bet. 5th and 6th.
0—154 Sand all way except at 80′ stratum of lime 3″ thick.

No. 37
Elev. 225
Location: Hahnemann Hospital—California Maple and Cherry.
0— 95 Sand and clay.
40— 46 Water sand, with clay.
105 Serpentine.

No. 38
Elev. 220
Location: Children's Hospital, California St., bet. Maple and Cherry Sts.
0— 67 Rock.

No. 39
Elev. 262
Location: 3654 Sacramento St., N. side, bet. Locust and Spruce Sts.
0— 22 Clay.
34 Rotten sandstone.
118 Blue trap, very hard water at 52.

No. 40
Elev. 207
Location: Laurel Hill Cemetery, E. Parker, bet. Geary and Euclid. About About 250′ N. of Geary, 100′ E. of Parker.
0—160 Sand all the way—rock at 159 or 160.

No. 46
Elev. 140
Location: N. E. Cor. Lake and 15th Sts., S. F. Nursery for Homeless Children.
0— 62 To rock.

No. 321
Elev. 540
Location: Sutro Forest—Keeper's house on road extending from Clarendon Ave. to Relief Home Pumps at top of ridge.
0— 30 Dug in clay.

No. 322
Elev. 790
Location: 50′ N. Palo Alto Ave., 150′ E. of Stanyan St.
0— 3 Surface soil.
3— 60 Red rock, with small seams of clay.

No. 545
Elev. 25
Location: S. W. Cor. Pump. Sta., Lobos Creek.
0— 22 Loose coarse sand.
22— 50 Harder sand, but plenty water.
50— 55½ Blue clay with sand.
55½ Bedrock (sandstone).

LAKE MERCED AND SUNSET DISTRICTS

No. 49
Elev. 200 (About grade)
Location: 730–28th Ave., E. side, bet. B and C, 100′ E. of 28th and 100′ S. of Balboa.
0— 67 Sand.
At 67 Clay and sand.
87 Rock.

No. 52
Elev. 116 (Level with 36th)
Location: N. W. Cor. Fulton and 36th, 150′ N. of Fulton, 100′ W. of 36th.
Depth 76′ sand all the way.

LOGS OF SAN FRANCISCO WELLS

LAKE MERCED AND SUNSET DISTRICTS

No. 58
Elev. 19 (Street level)
Location: Sheehan's, 49th and Fulton, 100′ W. of 49th and 100′ N. of Fulton.
Depth 85′—to second hardpan.

No. 60
Elev. 80
Location: (E) 42nd Ave., and bet. Lincoln Way and Irving, 300′ S. of Lincoln Way.
Depth 58′—Through two layers hardpan.

No. 61
Elev. 43 ± (Level with street)
Location: 4419 Irving St., 45th and 46th, S. side (50′ S. of Irving, 100′ W. of 45th.)

At	35	Clay—sand.
	55	Clay.
	80	Bottom-sand.
		Hardpan at bottom.

No. 62
Elev. 24
Location: 47th Ave. (No. 1338), bet. I and J, E. side ± 250′ S of I
32½′ Depth—through 2 hardpans at 25.

No. 69
Elev. 18 (2′ above street)
Location: 1628–48th Ave., bet. L and M, 100′ E. of 48th and 100′ N. of Moraga.
Depth 82′—Went through hardpan and struck water at 30—Main water stratum at about 80.

No. 85
Elev. 240
Location: 31st Ave., bet. K and L—Owner, Toy.
Depth 23′—rock at 20′.

No. 97
Elev. 340 ± (10′ below street)
Location: W. side 19th Ave., bet. N and O, 100′ W. of 19th, 150′ N. Ortega.
± 105′ Depth to rock.

No. 101
Elev. 417 ±
Location: 2022–19th, bet. P and Q.
140′ depth to quicksand and stopped.

No. 607
Elev. 200 ±
Location: Lot 7, Blk. 8, Ocean View Park, W. side Chester St., 160′ N. Palmetto.

0— 4	Black sand.
7	Dark sandy soil.
	Sand to bottom gradually getting lighter.
160—170′	Depth.

No. 67
Elev. 10 ±
Location: 1486 La Playa (20E) and 100′ N. of Kirkham.

0— 30	Sand.
30— 36	Red clay.
36— 45	Sand.

MISSION CREEK DISTRICT

No. 184
Elev. — 7
Location: Alaska Commercial Bldg., California and Sansome Sts.

0— 10	Sand.
10— 17	Blue mud.
17— 19	Fine sand, flowing water.
19— 32	Yellow sandy clay.
32— 40	Yellow clay.
40— 50	Yellow sand.
50— 62	Yellow clay.
62— 68	Sand and gravel.
68— 77	Blue sandy clay.
77— 87	Fine blue sand.
87—104	Blue clay.
104—120	Yellow clay.
120—137	Grey sand.
137—154	Blue clay.
154—159	Rotten rock.

No. 185a

Elev. — 5

Location: Insurance Exchange Bldg., S. E. California and Leidesdorff Sts.

0— 20	Blue clay.
20— 48	Yellow clay.
48— 65	Sand.
65— 98	Hard yellow clay.
98—112	Yellow sandy clay.
112—131	Water sand.
131—140	Blue clay.
140—150	8″ hard yellow clay with rock.

LOGS OF SAN FRANCISCO WELLS

MISSION CREEK DISTRICT

No. 187
Elev. 17
Location: California Market, California St., bet. Montgomery and Kearny Sts.

0— 4	Sandy clay.
4— 11	Sand.
11— 15	Sandy clay.
15— 57	Water bearing sand.
57— 69	Hard yellow clay and rotten rock.

No. 306
Elev. 3
Location: Standard Oil Bldg., N. W. Cor. Bush and Sansome Sts.

0— 22	Sand.
22— 43	Yellow clay.
43— 59	Water sand.
59— 89	Blue clay.
89—112	Sand.
112—136	Yellow clay.
136—139	Hard yellow clay and rocky.

No. 176
Elev. 3
Location: Wells Fargo Bldg., Second and Mission Sts.

0— 28	Sand.
28— 34	Soft blue clay.
34— 41	Hard blue clay.
41— 48	Yellow sand (L. W.).
48— 51	Yellow sandy clay.
51— 88	Yellow water sand.
88—160	Blue clay (jointly).
160—168	Hard blue sand.
168—170	Yellow cement sand.
170—180	Gray water sand.
180—210	Blue clay.
210—218	Cement gravel.
218—231	Blue clay.
231—236	Cement gravel.
236—246	Blue clay.
246—253	Yellow cement sand and gravel.
253—255	Blue sandy clay.
255—258	Yellow cement gravel.
258—262	Hard yellow clay.
262—264	Yellow rock.

No. 173
Elev. —10
Location: Rialto Bldg., New Montgomery and Mission St.

0— 80	Sand.
80—280	Sand, clay, etc.
280—680	Serpentine.

No. 192
Elev. 25
Location: Chronicle Bldg., Kearny and Market Sts.

0— 32	Dry sand.
32— 34	Water sand.
34— 41	Sandy yellow clay.
41— 96	Water sand.
96—107	Blue clay.
107—125	Soft sandy rock.
125—161	Sandy yellow clay.
161—170	Water sand.
170—195	Yellow clay.
195	Bed rock.

No. 252
Elev. 250
Location: Fairmont Hotel, S. side Sacramento St., 125′ E. of Mason St.

300	Porphyry and slate. (The formations referred to as porphyry and slate are very probably sandstone and shale.)

No. 304
Elev. 52
Location: Union Square Hotel, N. W. Cor. Stockton and Post Sts.

0— 9	Dry sand.
9— 22	Yellow sand.
22— 37	Hard tight sand.
37— 60	Water bearing sand.
60— 78	Hard yellow clay and rock.

No. 198
Elev. 32
Location: Butler Bldg., S. W. Cor. Stockton and Geary Sts.

0— 22	Dry sand.
22— 28	Dirty sand and water.
28— 31	Blue clay.
31— 38	Yellow sandy clay.
38— 87	Water bearing sand.
87— 98	Yellow sandy clay.
98—117	Yellow water sand.
117—128	Hard yellow sandy clay.
128—148	Sandy clay—some water.
148—162	Indurated water sand.
162—168.9	Hard yellow clay and rotten rock.

No. 170
Elev. 15
Location: Humboldt Bank Bldg., Market St., bet. 3rd and 4th.

0— 9	Yellow sand.
9— 10	Yellow sediment.
10— 38	Hard yellow clay.
38— 75	Yellow sand (water).
75— 80	Yellow sandy clay.
80—140	Blue clay.
140—152	Yellow sandy clay.
152—164	Red water sand.
164—169	Yellow clay.
169—180	Yellow water sand.
180—203	Blue clay.

MISSION CREEK DISTRICT

No. 169

Elev. 20

Location: Pacific Bldg., Fourth and Market Sts.

0— 38	Yellow sand.
38— 42	Blue clay.
42— 45	Yellow clay.
45— 93	Water bearing sand.
93—144	Blue clay.
144—150	Indurated water sand.
150—166	Red sand.
166—170	Water bearing sand.
170—176	Red sand.
176—184	Water bearing sand.
184—186	Yellow clay.
186—195	Hard blue and rotten rock.

No. 199

Elev. 26

Location: Flood Bldg., Market and Powell Sts.

1— 32	Surface sand.
32— 33	Black soil.
33— 38	Hard blue sandy clay.
38— 40	Hard yellow sandy clay.
40— 55	Yellow clay.
55— 77	Water bearing sand.
77— 80	White sandy clay.
80— 86	Yellow sandy clay.
86— 93	Red and mixed sandy clay.
93—109	Sandy clay, yellow.
109—118	Water bearing sand.
118—124	Red sandy clay.
124—126	Black loam.
126—133	Blue clay.
133—148	Red sandy clay.
148—160	Mixed sandy clay.
160—167	Water bearing sand.
167—168	Sandy clay.
168—178	Water bearing sand.
178—186	Yellow sandy clay.
186—190	Blue sandy clay.

Test hole: 224′ to solid rock, no water was found after 178.

No. 200

Elev. 28

Location: Poodle Dog Hotel, Mason, bet. Eddy and Ellis Sts.

0— 7	Sandy clay.
7— 38	Sand.
38— 97	Hard sand.
97—115	Hard sandy clay.
115—165	Water bearing sand.
165—172½	Yellow clay and broken rock.

No. 201

Elev. 68

Location: Bellevue Hotel, Geary and Taylor Sts.

0— 52	Sandy clay.
52— 77	Sand, water.
77—114	Hard sandy clay.
114—119	Indurated water sand.
119—173	Water bearing sand.
173—175	Blue clay.

No. 253

Elev. 170

Location: St. John Apartments, Polk St., near Sacramento.

Approximate log:—

30	Sand.
45	Clay.
80	Water sand.

No. 253a

Elev. 195

Location: Estate of Claus Spreckels, S. W. Cor. Van Ness and Clay.

0— 32	Dry sand.
32— 54	Clay.
54—132	Indurated water sand.
132—138	Clay and rotten rock.
138—141	Bed rock.

No. 257

Elev. 34

Location: Hale Bros. (Old well), Market St. 150′ N. E. 6th.

0— 25	Sand.
25— 36	Sandy yellow clay.
36— 67	Sand.
67— 90	Hard sand.
90—108	Blue sandy clay.
108—135	Water sand.
135—148	Blue clay.
148—152	Hard yellow sandy clay.
152—165	Sand.
165—170	Hard yellow clay.
170—179	Water sand.
179—182	Hard sandy clay.
182—193	Sand.
193—201	Blue clay and rotten rock.

No. 166a
Elev. 8
Location: Reno Hotel, Sixth St., bet. Howard and Folsom Sts.

0— 8	Concrete pit.
8— 17	Sand.
17— 21	Black mud.
21— 47	Black mud and loam.
47— 53	Hard sandy clay.
53— 71	Sandy clay.
71— 84	Hard sand.
84— 88	Sandy clay.
88—110	Water bearing sand.
110—127	Blue clay.
127—132	Hard sandy clay.
132—149	Water bearing sand.
149—156	Sandy clay.
156—175	Sand and sand rock, water.
175—191	Hard blue clay and rotten rock.

No. 244
Elev. 117
Location: N. E. Polk and Post Sts. (On alley back of Sutter St. carhouse.)

0— 67	Sand.
67— 72	Blue clay.
72—103	Yellow sandy clay.
103—141	Yellow water sand.
141—172	Small hole, hard, sandy clay.

No. 165
Elev. 29
Location: U. S. Postoffice, Seventh and Mission Sts.

0—107	Sand.
107—109	Clay and broken rock.
109—152	Hard blue clay.
152—155	Broken rock.
155—175	Blue clay with rock.
175	Bed rock.

No. 259
Elev. 7
Location: National Ice Co., North side Langton, bet. Bryant and Harrison Sts.

0— 10	Sand.
10— 25	Filled rock.
25— 42	Bay mud.
42— 44	Red clay.
44— 47	Blue sediment.
47— 52	Blue clay.
52— 55	Cement gravel.
55— 80	Hard sand.
80— 83	Clay and wood.
83— 88	Black sand.
88— 89	Blue clay and wood.
89— 93	Sand.
93— 95	Wood and clay.
95— 99	Sand.
99—116½	Hard blue clay.

No. 260
Elev. 3
Location: W. side Brannan St., 200′ from 7th St., 150′ in, McNab & Smith Stables.

0— 46	Surface sand.
46—132	Blue clay.
132—178	Water bearing sand.
178—182	Clay and rotten rock.

No. 158
Elev. 9
Location: C. R. Splivalo & Co., Bryant, bet. 7th and 8th Sts.

0— 40	Sand.
40— 54	Blue clay.
54— 70	Water bearing sand.
70—110	Blue clay.
110—150	Sand and gravel.
150—165	Blue clay.
165—185	Water bearing gravel and sand.
185—190	Blue clay.

No. 154
Elev. 14
Location: Galland Laundry, 317 8th St., bet. Harrison and Folsom Sts.

0— 15	Sand.
15— 25	Blue clay.
25—190	Sand and gravel.
190—200	Hard blue clay.

No. 293-1
Elev. 51.57
Location: City Hall site, Hole No. 1.

0— 12	Dry yellow sand.
12— 22	Wet yellow sand.
22— 26	Dark wet sand, small twigs and vegetable matter mixed in.
26— 29	Dark wet sand, no twigs, etc. "Hard" entire amount found in sample 4, small amount of decomposed vegetable matter.
29— 40	Wet, dark grey sand, "clean."
40— 40½	Decomposed vegetable substance, "soft."
40½— 45½	Wet dark grey sand, "clean."
45½— 46	Decomposed vegetable substance, "soft."
46— 54	Wet dark grey sand, "clean."
54— 54½	Decomposed vegetable substance, "soft."
54½— 86	Wet dark grey sand.
86— 86½	Decomposed vegetable substance, "soft."
86½— 90	Wet dark grey sand.
90— 96	Blue clay, "tough."

No. 293-2
Elev. 51.42
Location: City Hall Site, Hole No. 2.

0 — 12	Dry yellow sand.
12 — 21	Wet yellow sand.
21 — 21½	Decomposed vegetable substance, "Hard on top, soft under."
21½ — 27	Wet dark grey sand.
27 — 27½	Decomposed vegetable substance, "Top hard, bottom soft."
27½ — 30	Wet dark grey sand.
30 — 30′ 4″	Decomposed vegetable substance, roots, etc.
30′ 4″— 40	Wet dark grey sand.
40′ — 40′ 2″	Decomposed vegetable substance, hard.
40′ 2″— 50	Wet dark grey sand.
50 — 50′ 2″	Decomposed vegetable substance, hard.
50′ 2″— 87	Wet dark grey sand.
87 — 87′ 3″	Decomposed vegetable substance, hard.
87′ 3″— 90	Wet dark grey sand.
90 — 93	Blue clay, rather soft.
93 —100	Blue clay, dark brown spots, strong odor.
100 —104	Blue clay, tough.
104 —112	Blue clay, tough.

No. 293-7
Elev. 50.11
Location: City Hall Site, Hole No. 7.

0 —11′ 6″	Dry yellow sand.
11′ 6″— 19′	Wet dark grey sand.
19′ — 20′	A dark decomposed vegetable substance, hard.
20′ — 30′	Wet dark sand.
30′ — 42′	Wet dark grey sand.
42′ — 42′ 2″	Decomposed vegetable substance, hard.
42′ 2″— 54′	Wet fine grey sand.
54′ — 60′	Wet grey sand.
60′ — 70′	Wet grey sand, roots and vegetable substance.
70′ — 74′	Wet grey sand.
74′ — 74′ 1″	1″ strata decomposed vegetable substance, hard.
74′ 1″— 76′	Wet grey sand.
76′ —76′ 1½″	1½″ strata decomposed vegetable substance, hard.
6′ 1½″— 78′	Wet grey sand mixed with vegetable mater.
78′ — 81′	Wet grey sand.

No. 293-8
Elev. 54.82
Location: City Hall Site, Hole No. 8.

0 — 13′	Dry yellow sand.
13′ — 27′ 6″	Wet yellow sand.
27′ 6″— 28′	Decomposed vegetable substance, hard top, soft bottom.
28′ — 53′	Dark grey wet sand.
53′ — 53′ 2″	Decomposed vegetable substance, hard.
53′ 2″— 68′	Dark grey wet sand.
68′ — 68′ 4″	Decomposed vegetable substance.
68′ 4″— 76′	Dark grey wet sand.
76′ — 82′	Tough blue clay, clean.

No. 293-9
Elev. 53.37
Location: City Hall Site, Hole No. 9.

0 — 13′	Dry yellow sand.
13′ — 28′	Wet dark yellow sand.
28′ — 28′ 4″	Decomposed vegetable substance, hard.
28′ 4″— 50′	Wet dark grey sand.
50′ — 50′ 3″	Decomposed vegetable substance, soft.
50′ 3″— 67′	Wet dark grey sand.
67′ — 67′ 4″	Decomposed vegetable substance, soft.
67′ 4″— 72′	Wet dark grey sand.
72′ — 77′	Blue clay, tough.
77′ — 82′	Yellow clay and sand, mixed, soft.

No. 293-10
Elev. 52.15
Location: City Hall Site, Hole No. 10.

0 — 12	Dry yellow sand.
12 — 28	Wet yellow sand.
28 — 28′ 3″	Decomposed vegetable substance, hard.
28′ 3″— 65′	Wet dark grey sand.
65′ — 84′	Wet dark grey sand.
84′ — 84′	Blue clay.
84′ — 86′	Blue clay.
86′ — 88′	Blue clay.
88′ — 90′	Blue clay.

No. 293-3

Elev. 49.17

Location: City Hall Site, Hole No. 3.

0 —12′	Dry yellow sand.
12′ —18′ 6″	Wet yellow sand.
18′ 6″—18′ 7″	Decomposed vegetable substance, hard.
18′ 7″—28′	Wet dark grey sand.
28′ —28′ 1″	Decomposed vegetable substance, hard.
28′ 1″—30′	Wet dark grey sand.
30 —30′ 4″	Decomposed vegetable substance, hard top, soft bottom.
30′ 4″—38′	Wet dark grey sand.
38′ —38′ 2″	Decomposed vegetable substance, soft.
38′ 2″—49′	Wet dark grey sand.
49′ —49′ 4″	Decomposed vegetable substance, "soft."
49′ 4″—55′	Wet dark grey sand.
55′ —78′	Wet dark grey sand.
78′ —78″1″	Decomposed vegetable substance, hard.
78′ 1″—81′	Wet dark grey sand.
81′ —85	Wet dark grey sand.
85′ —85′ 5″	Decomposed vegetable substance, hard.
85′ 5″—86′	Wet dark grey sand.
86′ —90′	Blue clay "Brown spots."
90′ —99′	Blue clay, tough.

No. 293-4

Elev. 52.54

Location: City Hall Site, Hole No. 4.

0 —12′	Dry yellow sand.
12′ —21′	Wet grey sand, dark.
21′ —21′ 6″	Decomposed vegetable substance, hard.
21′ 6″—26′	Wet grey sand, dark.
26′ —26′ 4″	Decomposed vegetable substance, hard.
26′ 4″—41′	Wet grey sand, dark.
41′ —41′ 1″	Decomposed vegetable substance, hard.
41′ 1″—66′	Wet grey sand, dark.
66′ —75′	Wet grey sand, dark.
75′ —75½	Decomposed vegetable substance, hard.
75½ —78	Wet grey sand, dark.
78′ —78′ 1″	Decomposed vegetable substance, hard.
78′ 1″—82′	Wet grey sand, dark.
82′ —85′	Blue clay.

No. 293-5

Elev. 52.26

Location: City Hall Site, Hole No. 5.

0 —13′ 6″	Dry yellow sand.
13′ 6″—23′	Wet dark grey sand.
23′ —24′	Decomposed vegetable matter, hard.
24′ —26′	Wet dark grey sand.
26′ —26′ 2″	Decomposed vegetable substance, hard.
26′ 2″—38	Wet dark grey sand.
38′ —38′ 6″	Decomposed vegetable substance, soft.
38′ 6″—44′	Wet dark grey sand.
44′ —44′ 6″	Decomposed vegetable substance, hard.
44′ 6″—74	Wet dark grey sand.
74′ —74′ 1½″	Decomposed vegetable substance, hard.
74′1½″—80′	Wet dark grey sand.
80′ —86′	Blue clay.

No. 293-6

Elev. 51.51

Location: City Hall Site, Hole No. 6.

0 —12′ 6″	Dry yellow sand.
12′ 6″—19′	Yellow wet sand.
19′ —19′ 6″	Decomposed vegetable substance, hard.
19′ 6″—25′	Yellowish wet sand.
25′ —47′	Greyish wet sand.
47′ —47½	Decomposed vegetable substance, hard.
47½′ —78′	Fine greyish wet sand.
78′ —78′ 1″	1″ strata decomposed vegetable substance, hard.
78′ 1″—80′	Fine greyish wet sand.
80′ —80′	Encountered firm blue clay.
80′ —104′	Tough blue clay.
104′ —108′	Tough yellow clay.
108′ —109′	Soft yellow clay and sand.
109′ —113′	Coarse sand, yellow clay.
113′ —121′	Coarse sand and yellow clay
121′ —122′	Hard sandy, yellow clay.

LOGS OF SAN FRANCISCO WELLS

MISSION CREEK DISTRICT

No. 294-1
Elev. +47.50
Location: Exposition Auditorium Site, Well No. 1.

0 — 2′ 1″	Fill.
2′ 0″— 2′ 6″	Soil.
2′ 6″—18′ 4″-	Yellow sand (dry).
18′ 4″—27′ 3″	Grey sand (wet).
27′ 3″—67′ 11″	Green sand (wet).
67′ 11″—68′ 1″	Soft vegetable earth.
68′ 1″—70′ 9″	Green sand (wet).
70′ 9″—71′ 9″	Vegetable earth.
71′ 9″—73′ 9″	Green clay.
73′ 9″—80′ 0″	Hard sandy clay.
80′ 0″—81′	Hard green clay.
81′ —92′ 8″-	Green sand (hard).

No. 294-2
Elev. +45.11
Location: Exposition Auditorium Site Well No. 2

0 —13′ 0″	Yellow sand (dry).
13′ —16′ 6″	Brown sand (dry).
16′ 6″—31′	Brownish green sand (wet).
31′ —46′ 5″	Green sand (wet).
46′ 5″—46′ 6″	Peat.
46′ 6″—51′	Green sand (wet).
At 28′ 2″	Redwood bark.

No. 294-4
Elev. +44.69
Location: Exposition Auditorium Site Well No. 4.

0— 6′ 6″	Yellow sand (dry).
15′ 0″	Red sand (dry).
17′ 0″	Brown sand (dry).
18′ 0″	Soft brown earth.
24′ 2″	Brown sand.
24′ 3″	Hard peat.
26′ 0″	Brown sand.
37′ 10″	Green sand (wet).
38′ 2″	Soft brown earth.
46′ 4″	Green sand (wet).
48′ 1″	Vegetable earth.
49′ 0″	Sandy green clay.
49′ 2″	Sandy brown clay.
78′ 6″	Sandy green clay.
89′ 0″	Hard sandy yellow clay.
92′ 0″	Green sand (wet).

No. 294-5
Elev. +47.52
Location: Exposition Auditorium Site, Well No.5.

0—14′ 0″	Yellow sand (dry).
20′ 6″	Brown sand (dry).
27′ 0″	Greenish yellow sand (wet).
48′ 0″	Green sand (wet).
48′ 1″	1″ soft peat.
66′ 0″	Green sand (wet).
66′ 1″	1″ hard peat.
74′ 0″	Green sand (wet).
75′ 6″	Vegetable earth.
79′ 6″	Green clay.
80′ 6″	Green sand.
81′ 7″	Green sandy clay.

No. 294-6
Elev. +46.92
Location: Exposition Auditorium Site, Well No. 6.

0— 9′ 0″	Artificial fill.
23′ 6″	Brown sand.
41′ 3″	Green sand.
41′ 3½″	Soft peat.
55′ 4″	Green sand.
56′ 4″	Black soil.
59′ 6″	Brown sandy clay.
73′ 8″	Sandy green clay.
74′ 2″	Green clay.
78′ 8″	Sandy green clay.

No. 294-7
Elev. +48.65
Location: Exposition Auditorium Site, Well No. 7:

0—14′ 0″	Yellow sand (dry).
16′ 0″	Brown sand (dry).
45′ 0″	Green sand.
45′ 2″	Soft vegetable earth.
51′ 7″	Green sand.
51′ 7½″	Soft brown earth.
61′ 0″	Green sand.

No. 294-9
Elev. +47.53
Location: Exposition Auditorium Site, Well No. 9.

0—14′ 0″	Yellow sand (dry).
16′ 2″	Brown sand (dry).
32′ 7″	Greenish yellow sand (wet).
50′ 6″	Green sand (wet).
51′ 0″	Soft vegetable earth.
64′ 4″	Green sand (wet).
64′ 4½″	Soft brown vegetable earth.
77′ 0″	Green sand (wet).
At 71′ 6″	Trace of vegetable earth.
77′ 2″	Soft vegetable earth.
78′ 6″	Hard vegetable earth.
84′ 9″	Earthy green clay.
96′ 6″	Green clay.

No. 294-10
Elev. +45.49
Location: Exposition Auditorium Site, Well No. 10.

0—10′ 0″	Yellow sand.
15′ 0″	Brown sand.
25′ 0″	Greenish yellow sand.
34′ 0″	Green sand (wet).
34′ 0″	Soft peat.
42′ 6″	Green sand (wet).
42′ 6½″	Soft peat.
64′ 0″	Green sand (wet).
64′ 6″	Peat.
70′ 10″	Green sand (wet).
74′ 0″	Earthy green clay.
80′ 0″	Green clay.
80′ 6″	Black sand (wet).
84′ 0″	Green sand (bright and wet).

MISSION CREEK DISTRICT

No. 294-13
Elev. +48.98
Location: Exposition Auditorium Site, Well No. 13.
0—11′ 0″ Yellow sand (dry).
31′ 0″ Brown sand (wet).
55′ 6″ Greenish brown sand (wet).
55′ 7″ Hard peat.
82′ 2″ Green sand.
82′ 4″ Hard peat.
85′ 0″ Green sand.
100′ 9″ Green clay.

No. 294-14
Elev. +46.65
Location: Exposition Auditorium Site, Well No. 14.
0—14′ 0″ Brown sand.
27′ 0″ Greenish yellow sand (wet).
41′ 0″ Green sand (wet).
41′ 2″ Hard peat.
81′ 0″- Green sand (wet).
81′ ½″ Peat.
84′ 6″ Black sand (wet).
89′ 6″ Green clay.
93′ 0″ Earthy green clay.

No. 294-15
Elev. +47.43
Location: Exposition Auditorium Site, Well No. 15.
0—14′ 0″ Yellow sand (dry).
20′ 0″ Yellow sand (wet).
24′ 10″ Grey sand (wet).
39′ 6″ Green sand (wet).
39′ 8″ Peat.
71′ 0″ Green sand (wet).
71′ 1″ Hard peat.
78′ 6″ Green sand (wet).
81′ 6″ Vegetable earth.
82′ 6″ Green clay.
87′ 0″ Vegetable earth.
98′ 6″ Green clay.
At 98′ 6″ Bottom of well.

No. 292
Elev. 57
Location: Standard Shirt Factory, Grove and Gough Sts.
0— 30 Sand.
30—188 Sand and mud to clay.
188—200 Blue clay, hard.

No. 289
Elev. 80
Location: National Brewing Co., Fulton and Webster Sts.
0—140 Sand all the way.
140 Rock.

No. 290
Elev. 90
Location: National Brewing Co., Fulton ar Webster Sts.
0—130 Sand all the way.
130 Rock.

No. 291
Elev. 86
Location: Cerciat-Lace House French Lau dry, 100 S.
McAllister—200 W. Buchanan.
0—140 Sand all the way.
140 Water sand.
175 Water sand.

No. 286
Elev. 106
Location: S. F. Laundry Assn., 50 S. Edd 100 E. Steiner St.
0— 91 All sand.

No. 283.
Elev. 110
Location: Under La Boheme Cafe, Ellis S 150′ W. Webster.
0—110 Sand.
110—120 Blue clay.
120—135 Water sand.

No. 282
Elev. 115
Location: Lang Bros., 100′ S. O'Farrell, 20 W. Webster St.
0—110 Sand.
110—120 Blue clay.
120—135 Water sand.

No. 281
Elev. 155
Location: J. Bedecarrat Laundry, Divisader St., 100′ S. Ellis St.
0— 35 Sand.
42 Water.
103 Blue clay and soft rock.

No. 279
Elev. 145
Location: Riverdale Creamery, 50′ E. Divis adero, 40′ N. O'Farrell St.
0— 9 Sand.
9— 54 Sandy clay.
54— 60 Water bearing sand.
60— 70 Hard sand.
70— 82 Sandy clay.
82— 91 Water bearing sand.
91— 99½ Rock.

LOGS OF SAN FRANCISCO WELLS

MISSION CREEK DISTRICT

No. 278
Elev. 142
Location: Palace Laundry Co., 125′ S. of Post St., 175′ W. Divisadero.

0— 32	Sandy clay.
32— 41	Water sand.
41— 50	Hard sandy clay.
50— 58	Sandy clay.
58— 59	Clay.
59— 80	Sand.
80—110	Water bearing sand.
110—114	Clay.
114—117	Water bearing sand.
117—125	Sandy clay.
125—162	Indurated water sand.

No. 277
Elev. 147
Location: Merced Dairy, 125′ W. Broderick, 140′ N. Post.

0— 20	Sand.
20— 40	Clay.
40—104	Spongy, porous, soft sandstone.

No. 271a. 4 Test Holes.
Elev. No. 1—190 No. 2—174
No. 3—170 No. 4—187
Location: Christian Science Church (old), Scott and Sacramento Sts.

No. 1: at S. W. Cor.

0— 12	Sand.
12— 18	Dirty sediment.
18— 54	Yellow sandy clay.
54— 64	Hard yellow clay.
64—102	Sandy clay.
102—104	Blue sandy clay.
104—107	Shale.

No. 2: W. Scott, 130′ S. Sacramento.

0— 7	Sand.
7— 14	Sand and sediment.
14— 22	Hard sandy clay.
22— 80	Sandy clay.
80—103	Hard sand.
103—109	Hard cement sand.
109—131	Grey water sand.
131—138	Blue shale.

No. 3: 130′ S. of Sacramento, 130′ W. of Scott.

0— 10	Sand.
10— 14	Black sediment.
14— 30	Hard yellow sandy clay.
30— 80	Soft sand and sediment.
80— 90	Hard sandy clay.
90—108	Sand and sediment.
108—132	Soft sand.
132—141	Hard sandy clay.
141—153	Blue clay.
153—154	Shale.

No. 4: S. Sacramento, 130′ W. Scott.

0— 12½	Sand.
12½— 19	Black sediment.
19— 30	Hard red sandy clay.
30— 48	Yellow sandy clay.
48— 56	Hard yellow sandy clay.
56—108	Soft sandy clay.
108—117	Hard sandy clay.
117—120	Blue clay.
120—121	Shale.

No. 298
Elev. 10
Location: Milwaukee Brewery, S. side 10th St., bet. Bryant and Harrison Sts.

0— 40	Sand.
40—108	Blue clay.
108—109	Gravel.
109—301	Serpentine.

Struck water at 29′.

No. 146
Elev. 8
Location: Enterprise Brewing Co., E. side Folsom St., bet. Enterprise and 17th Sts.

0— 10	Sand.
10— 25	Fill.
25— 42	Bay mud.
42— 44	Red clay.
44— 47	Blue sediment.
47— 52	Blue clay.
52— 55	Cement gravel.
55— 80	Hard sand.
80— 83	Clay and wood.
83— 88	Black sand.
88— 89	Blue clay and wood.
89— 93	Sand.
93— 95	Wood and clay.
95— 99	Sand.
99—116½	Hard blue clay.

No. 147
Elev. 8
Location: American Steel and Wire Co., S. W. Cor. 15th and Harrison Sts.

0— 7	Filled ground.
7— 13	Yellow sand.
13— 15	Blue sand.
15— 38	Blue clay.
38— 43	Yellow clay.
43— 61	Sandy yellow clay.
61— 64	Sandy blue clay.
64— 81	Water sand.
81— 94	Blue clay.
94	Bed rock.

LOGS OF SAN FRANCISCO WELLS

MISSION CREEK DISTRICT

No. 147b
Elev. 8
Location: American Steel and Wire Co., Old Well, E. line of Folsom St., 235′ S. of 15th St.

0— 14	Filled ground.
14— 16	Grey sand.
16— 24	Blue mud.
24— 28	Marsh mud and grass.
28— 32	Grey sand clay.
32— 43	Yellow sand clay.
43— 56	Yellow water sand.
56— 58	Yellow sand clay.
58— 65	Grey clay.
65— 69	Blue clay.
69— 72	Blue sand clay.
72—111	Grey water sand.
111—115	Grey clay.
115—125	Grey water sand and gravel.
125—136	Soft water sand.
136—140	Grey clay
140—146	Sticky sand and clay
146—151	Blue clay.
151—153	Yellow cement.
153—156	Rotten rock (serpentine).

No. 133
Elev. 13
Location: Golden Gate Steam Laundry, N. W. Folsom and 17th Sts.

0— 5	Filling.
5— 20	Sand.
20— 40	Blue mud.
40— 55	Sand.
55— 84	Clay.
84— 96	Hard sandy clay.
96—103	Hard sand.
103—112	Sand and gravel.
112—116	Sandy clay.
116—136	Sand.
136—145½	Hard clay.
	Serpentine at bottom.

No. 136
Elev. 15
Location: Tacoma Bottling Co., W. side Harrison St., bet. 19th and 20th Sts.

0— 20	Sand.
20— 30	Blue clay.
	Sand.
	Sand and coarse gravel.
132	Hardpan.

No. 131
Elev. 12
Location: Old Homestead Bakery, W. side Shotwell St., 190′ N. of 19th St.

0— 9	Sand.
9— 69	Blue clay and sand.
69— 76	Gravel.
76— 90	Black clay.

No. 128
Elev. 8
Location: San Mateo County Dairy, W. Howard St., S. 14th St.

0— 24	Sand, clay thin layer.
24— 80	Sand, clay 5 or 6 inches.
102	Sand and gravel.
	Blue clay.

No. 125
Elev. 30
Location: Sanitary Laundry Co., 15 Hermann St., bet. Otis and Valencia Sts.

80	Blue clay.
90	Sand and gravel.
90	Bed rock.

No. 122
Elev. 30
Location: Sterling Laundry Co., No. 56 (W.) Julian Ave., 14th and 15th Sts.

Hard sand to	60
Clay at	60
Soft sandstone to	113
Blue bed rock	113

No. 121
Elev. 31
Location: Gartland Apartments, N. E. 16th and Valencia Sts.

Hard sand to	108
Blue rock to	122
Water under blue rock.	

No. 116
Elev. 40
Location: Dairy Delivery Co., 3550 19th St., bet. Valencia and Guerrero Sts.

Struck water at	15	
Clay at	40	6 or 8 ft.
Sand to	125	
Some gravel at	125	
Sand		
Bed rock	150	

No. 114
Elev. 68
Location: National Laundry, 18th St., bet. Church and Sanchez Sts.

4 Wells.

0— 84	Sand all way.	0—102	Sand.
84	Rock.	102	Rock.
0— 90	Sand all way.	0—130	Sand.
90	Rock.	130	Rock.

MISSION CREEK DISTRICT

No. 109
Elev. 104
Location: Duboce Apartments, Fillmore and Duboce.
0— 42 Sand to serpentine.

No. 108
Elev. 227
Location: German Hospital, 14th and Castro Sts.
0—130 Sand all the way.

No. 107-B
Elev. 214
Location: German Hospital, E. Castro, Duboce and 14th St.
Well No. 1.
0— 17 Sand.
36 Sandy clay.
55 Fine sandy clay.
81 Serpentine, blue with some green.
90 Serpentine, weathered a little more.
102 Serpentine, weathered (containing come mg. carbonate-clayey.)
143 Serpentine, massive.
197 Serpentine, with pressure plane of slate.
224 Gravel, no cementing material containing pebbles of chert sandstone and serpentine.
256 "Blue mountain stone with white quartz"—metamorphic schist, contains quartz and calcite fragments.
300 "Wasserrock," a very coarse clean sand.

No. 107-A
Elev. 214. German Hospital.
Well No. 2.
0—130 Fine gravel.
140 Coarse gravel, probably cemented.
150 Blue gray sand, very few quartz pebbles.
200 Greyish schist.
250 Greyish schist.
311 Conglomerate, pebbles of schist, altered sandstone and little quartz.
325 Fine gravel, pebbles of schist, principally, with some quartz, a little mica.
350 Gravel, pebbles of calcite quartz, sandstone, some schist.
380 Same as last except that slightly cemented and does not contain so much quartz and calcite.
400 Same.
420 Clean gravel.
434 Clay shale.
444 Coarse sand, quartz, schist.
471 Shale, clayey.
515 Sand, quartz, schist, calcite.
564 Fine sand, contains quartz, feldspars, schist iron, oxide, calcite.

No. 164
Elev. 22
Location: Grant Bldg., 7th and Market Sts.
0— 30 Sand.
30—129 Blue serpentine.

No. 115
Elev. 44
Location: Atchison Mill Co., N. W. 19th and Guerrero Sts.
161′ 8″ All sand.

No. 126
Elev. 14
Location: Atlas Laundry Co., 140 Erie St., N. side, bet. Mission and Howard Sts.
Clay at 158.

No. 144
Elev. 10
Location: H. Friedrichs, E. side Folsom, bet. 17th and 18th, about 250′ N. of 18th St.
0— 14 Fill.
14— 22 Blue mud.
22— 36 Blue clay.
36— 86 Hard yellow sand.
86— 98 Hard blue clay.
98—104 Cement gravel.
104—138 Water bearing sand.
138—144 Blue clay.

No. 245
Elev. 150
Location: Granada Hotel, N. side Sutter, 150′ W. Hyde.
0— 65 Sand to rock at 65.

No. 247
Elev. 154
Location: 1467 Pine, 120′ S. Pine, 150′ E. of Polk St.
0—125 Sand with 2 strata of clay.

No. 248
Elev. 155
Location: Mme. Lacoume, 75′ S. California, 111′ E. of Polk.
136 Rock.

No. 264
Elev. 50
Location: Hammam Baths, S. Ellis, W. Mason.
0— 7 Sandy clay.
7— 38 Sand.
38— 97 Hard sand.
97—115 Hard sandy clay.
115—165 Water bearing sand.
165—172½ Yellow clay and broken rock.

MISSION CREEK DISTRICT

No. 265
Elev. 20
Location: Commercial Bldg., Jessie and 4th Sts.

0— 24	Sand.
24— 38	Yellow clay.
38— 74	Water sand.
74— 90	Indurated water sand.
90—135	Blue clay.
135—160	Hard sandy clay.
160—168	Red sand rock.
168—185	Water bearing sand.
185—201	Blue clay and rotten rock.

No. 270
Elev. 190
Location: Pacific Hebrew Orphan Asylum, middle of block, Grove, Hayes, Scott, Divisadero.
To bed rock, about 70′.

No. 329
Elev. 74
Location: S. 19th St., bet. Carolina and Wisconsin Sts., 20′ from Carolina St.

0— 34	Blue rock.

No. 331
Elev. 11
Location: S. E. Cor. Wisconsin and 16th Sts.

0— 17	Fill.
17— 21	Blue sandy clay.
21— 37	Yellow sandy clay.
37— 43	Yellow sand.
43— 50	Yellow sandy clay.
50— 65	Hard blue clay.
65— 73	Blue shale.

No. 288
Elev. 100
Location: 120′ N. side Turk, 150′ W. Fillmore.

0— 60	All sand.
	At 60 yellow clay.
	6″ thick.

No. 301.
Elev. 16
Location: La Grande Laundry, S. side 12th St., bet. Folsom and Howard Sts.

0— 15	Sand, surface water.
15— 30	Hard pan.
30— 44	Lower water.
44— 97	Water sand.
44— 97	Water sand.
97—123	Blue clay.
123—144	Water sand.
144	Solid blue rock.

(NOTE: For test holes along Fillmore Street Tunnel, see Harbor View District.)

No. 176-A
Elev. 20
Location: Balboa Bldg., E. Cor. of Market and 2nd Sts.

0— 31	Sand.
31— 42	Blue clay.
42— 45	Blue sandy clay.
45— 48	Yellow sandy clay.
48— 70	Water sand.
70— 84	Yellow sandy clay.
84— 95	Blue clay.
95— 99	Yellow clay.
99—114	Blue sandy clay.
114—117	Blue water sand.
117—160	Blue clay.
160—165	Yellow sandy clay.
165—176	Yellow water sand.
176—179	Blue clay.

No. 541
Elev. 200
Location: St. Francis Hospital, Bush and Hyde Sts.

0— 40	Sand.
40	Rock.

Twin Peaks Tunnel Test Holes from No. 1 (at Valencia and McCoppin Streets) to No. 23 (in Danvers Street near Caselli St.), inclusive, were made for the purpose of testing the material along the line of the proposed Twin Peaks Tunnel.

For reference in this report, they are numbered as follows:
Hole No. 1—23a to Hole No. 23—23w.

No. 23a—Hole No. 1
Elev. 40
Location: N. E. Cor. Valencia and McCoppin Sts.

0— 23	Red sand.
23— 29	Blue clay.
29— 30	Green sandy clay.
30— 33	Red sandy clay.

No. 23b—Hole No. 2
Elev. 61
Location: N. E. Cor. McCoppin and Market Sts.

0— 9	Loose sand stone.
9— 22	Sand.
22— 30	Red sandy clay.
30— 31½	Shale.

No. 23c—Hole No. 3
Elev. 75.5
Location: N. side of Market St., 150′ W. of W. line of McCoppin St.

0— 16	Rotten rock and sand (fill).
16— 20	Black clay.

LOGS OF SAN FRANCISCO WELLS

MISSION CREEK DISTRICT

No. 23d—Hole No. 4
Elev. 91½
Location: N. W. Cor. Market and Laguna Sts.

0— 8	Shale.
8— 8½	

No. 23e—Hole No. 5
Elev. 99
Location: N. W. Cor. Market and Reservoir Sts.

0— 14	Rock fill.
14— 16	
16— 18	Blue clay (sandy).
18— 25	Stiff green clay.
25— 25½	Decomposed rock.
25½—26	Shale.

No. 23f—Hole No. 6
Elev. 89½
Location: S. E. Cor. Market and 14th St.

0— 20	Sand and rock fill.
20— 21	Sandy loam.
21— 35	Sand and water.
35— 35½	Peat.
35½—45	Sand and water.

No. 23g—Hole No. 7.
Elev. 94+
Location: S. side Market, 162′ E. of E. line 14th St.

0— 23	Rock fill.
23— 33	Sand and water.
33— 35	Black clay.
35— 40	Blue clay.
40— 43	Gray clay.
43— 45	Rotten rock.

No. 23h—Hole No. 8
Elev. 90+
Location: W. side Market St., off W. line Church St.

0— 17	Rock and sand fill.

No. 23i—Hole No. 9
Elev. 93½
Location: S. side Market St., 79′ W. of Church St.

0— 19	Rock and sand fill.
19— 20	Water.
20— 22	Rotten rock.
22— 27	Black sand.
27— 40	Sand and water.

o. 23j—Hole No. 10.
lev. 99
ocation: S. side Market St., 207′ E. of 15th St.

0— 6	Rock and sand fill.
6— 14	Red sandy clay.
4— 42	Sandy clay.
2— 45	Sand rock.
5— 48	Red sand.
8— 50	Brown sand.

No. 23k—Hole No. 11
Elev. 117+
Location: N. side Market and 15th Sts.

0— 38	Red sandy clay.
38— 46	Brown sand.

No. 23l—Hole No. 12
Elev. 120
Location: N. side Market St., 255′ E. of Noe St.

0— 12	Red sandy clay.
12— 29	Sand.
29— 31	Red sandy clay, very sandy.
31— 37	Red sand.

No. 23m—Hole No. 13
Elev. 128½
Location: N. side of Market St., 20′ W. of 16th St.

0— 10	Red sandy clay.
10— 20	Red sand.
20— 23	Rotten red rock, clay.
23— 26	Stiff yellow clay (red rock).
26— 30	Red sand clay (adobe).

No. 23n—Hole No. 14.
Elev. 135
Location: E. side Market St., 46′ E. of E. line of Castro St.

0—14½	Red sandy clay.
14½—17½	Stiff yellow clay (red rock).
17½—26	Red sandy clay (adobe).
26 —27½	Stiff yellow clay.
27½—30	Yellow sandy clay.

No. 23o—Hole No. 15
Elev. 149
Location: On Collingwood St., 70′ S. of 17th St.

0 —15½	Red sandy clay.
15½—23½	Sand.
23½—30	Red sandy clay.

No. 23p—Hole No. 16
Elev. 164
Location: Diamond St., 138′ S. of 17th St.

0 — 5½	Red sandy clay.
5½— 6½	Blue clay.
6½—12	Brown clay.
12 —23	Sand.
23 —25	Clay, brown.
	Red sandy clay.

No. 23q—Hole No. 17
Elev. 168
Location: Eureka St., 183′ S. of 17th St.

0— 8	Red sandy clay.
8— 12	Sand.
12— 27	Red sandy clay (dry loose)
27— 28	Sandy loam.
28— 30	Red sand.

LOGS OF SAN FRANCISCO WELLS

MISSION CREEK DISTRICT

No. 23r—Hole No. 18

Elev. 184
Location: Douglas St., 248′ N. of 18th St.

0— 13	Red sandy clay.
13— 26½	Brown clay.
26½— 28	Stiff yellow clay.
28— 35	Red sandy clay.

No. 23s—Hole No. 19

Elev. 190
Location: Clara St., 165′ N. of 18th St.

0— 4	Red sandy clay.
4— 20	Sand.
20— 24	Seepage water.
24—36½	Stiff yellow clay.

No. 23t—Hole No. 20

Elev. 196
Location: Hattie St., N. E. Cor. 18th St.

0— 7	Stiff yellow clay.
7— 18	Red clay, seepage water.
18— 20	Yellow clay (rotten rock).
20— 28	Blue sandy clay.
28— 40	Blue clay (very hard).

No. 23u—Hole No. 21

Elev. 215
Location: Clover St., 73′ S. of 18th St.

0— 9	Red clay.
9— 10	Brown clay (black).
10— 16	Red clay (rocky).
16— 18	Seepage water.
18— 23	Blue clay (very hard).
23— 35	Blue sandy clay.
35— 43	Blue clay (stiff rocky).
43— 50	Brown sandy clay.

No. 23v—Hole No. 22

Elev. 241
Location: N. side Caselli Ave., 188′ E. of E. side Danvers St.

0— 13	Red clay.
13— 19	Brown clay (black).
19— 21	Brown clay water.
21— 31	Red clay (water mud).
31— 41	Blue clay (rocky).
41— 43	Stiff blue clay.
43— 45	Blue clay merging to brown.
45— 64	Brown clay.

No. 23w—Hole No. 23

Elev. 267+
Location: Danvers St., about 200′ E. of Caselli Ave.

0— 14	Brown clay.
14— 16	Red sand (water).
16— 27	Red sand rock (water).
27— 34	Blue sand rock (water).
34— 51	Blue clay (stiff).
51— 54	Brown clay and rock.

No. 140-A and B

Elev. 26
Location: N. E. Cor. Bryant and 19th Sts.
96 to bed rock.

No. 541

Elev. 200
Location: St. Francis Hospital, N. E. Cor. Bush and Hyde Sts.

0— 40	Sand.
40—40+	Rock

No. 295

Elev. 127
Location: Mt. Zion Hospital, N. side Post, W. of Scott St.

0— 47	Sand.
47— 49	Blue clay.
49— 54	Yellow clay.
54— 62	Soft sand rock, water.
62— 90	Yellow sandy clay.
90—105	Water sand.
105—111	Blue clay.
111—124	Yellow clay.
124—136	Soft sandrock, water.
136—140	Yellow sandy clay.
140—147	Hard yellow clay, rocky, water.

No. 156

Elev. 10
Location: Metropolitan Laundry, N. side Harrison St., bet. 7th and 8th.
200 to rock

No. 299

Elev. 16
Location: S. E. Cor. 11th and Folsom Sts.
208 to rock.

VISITACION DISTRICT

No. 208
Elev. 128
Location: Hildebrand-Campbell Ave., bet. Beta and Delta, S. side of Campbell.
0—120 Rock.

No. 209
Elev. 100
Location: N. W. Cor. Delta and Arleta Sts.
Rock at 106

No. 210
Elev. 90
Location: Teddy and Arleta Aves, 150′ E. of Delta.
85— 90 Rock.

No. 212
Elev. 200
Location: Visitacion Ave. and Brown St., 600′ N. of Sunnydale Ave.
0— 72 Sand.
72 Gravel.

No. 213
Elev. 70
Location: 50′ in rear of 262 Spreckels Ave., 600′ S. of Sunnydale Ave.
0— 30 Sand.
30 Rock.

No. 214
Elev. 68
Location: 262 Spreckels Ave., 600′ S. of Sunnydale Ave.
0— 6 Sand.
6— 9 Clay.
9— 24 Sand.
24— 36 Clay and loose rock.

No. 215
Elev. 70
Location: 270 Spreckels Ave., 630′ S. of Sunnydale.
0— 4 Sand.
4— 10 Clay.
10— 22 Shale.
22 Rock.

No. 231
Elev. 18
Location: Martin Station, S. E. Schwerin and Walbridge.
0— 5 Black soil.
5— 20 Yellow clay.
20— 34 Blue clay.
34— 38 Black soil.
38— 45 Blue sandy clay.
45— 46 Cemented sand.
46— 96 (Missing).
96—121 Red sandy clay.
122—125 Grey water sand.
126—127 Blue clay.
128—137 Sandstone, water.

Geology of San Francisco County

Pages 134 to 136.

Geology of San Francisco County

The object of the Geological studies briefly presented in the following pages, has been to determine, if possible, its relation and probable influence upon the underground waters.

The Geology of the San Francisco peninsula is shown on a map, page 159, this map being a colored photographic reproduction of a map by Professor Andrew C. Lawson. Professor Lawson has made a comprehensive study of the geology of the San Francisco peninsula and the results of his studies are fully presented on pages 399–476 inclusive, 15th Annual Report, U. S. Geological Survey.

Many other reports have been made, dealing with various phases of the geology and topography of the County but generally they shed little or no light on the relation of the geology to the underground waters.

The writer and his assistants have made a thorough and comprehensive field study of the geology of San Francisco County and in addition to noting the general structural conditions, studies were made to determine the probable influences of the positions of the geological formations to the underground water supply.

In order to more clearly present what follows, a very general and very brief description is given of the causes which have led to the present topography of the County.

With the exception of a small area of Merced sandstone lying between Lake Merced and the Ocean, the basalts and serpentines, the rock encountered in San Francisco County are of the Franciscan series.

The Franciscan series is composed chiefly of chert and sandstone with minor beds of clay, shale and conglomerate.

The present topography, for the purposes at hand, can be dated from the uptilting of the lower portion of the County due to the Merced fault. This uptilting has in general forced the drainage to the North.

There are really no well defined stream channels and there has been little or no stream erosion, therefore there is practically no gravel throughout the area. The drainage areas are small and the slopes of the stream beds comparatively slight.

The cherts, basalts, sandstones and serpentines in disintegrating have been completely broken down and now occupy the low areas as sands and clays.

The smallness of the catchment areas and the fact that there has been in the past comparatively little or no surface flow from any of them, suggests that the various materials deposited in the low areas, such as sands and clays, should be quite continuous as distinguished from what is found in the various gravel cones and beds around the San Francisco Bay.

As is well known, large gravel beds, such as are encountered in the Livermore Valley and in the Santa Clara Valley, have been carried down by the torrential Coast Range streams and deposited, according to the degree of fineness, etc., in the valley below. These streams in wandering back and forth across the valley floors, have left in their wake a heterogeneous mass of clays, sands and various sizes of gravels and as a rough general rule, the materials so deposited, show no stratification or continuity.

It has already been stated that the eroded material deposited in the lower valleys, consists almost entirely of sands and clays and the relative amounts of the sands and clays, as shown from logs of various wells, is quite uniform throughout the entire county.

In the course of the field studies, at the time of the field canvass of the various wells and also at the time of the geological studies, many shallow wells and a few unimportant springs were found, the waters from which were obtained from the original Franciscan rocks. The amount of water however obtained from any of these shallow wells or springs was in each case comparatively insignificant. None of the Franciscan rocks nor the serpentines and basalts are porous and there is practically no absorption by them and the comparatively small amounts of water occasionally found issuing from these rocks have found their way through some small subsequent slip or fault.

Many attempts have been made to obtain water from the original rock formations but in no instance have these attempts met with any material success.

Following is a brief summary of some of the more important test holes or wells driven into the solid rock formations:

No. 252—Fairmont Hotel, 300 feet in sandstone—no water.

No. 107B—German Hospital, on Castro Street between Duboce and 14th streets—564 feet deep. Over 500 feet in solid rock—well not in use. No material amount of water.

No. 150—St. Luke's Hospital, Army Street, between Valencia Street and San Jose Avenue, 208 feet deep, last 108 feet in rock. Very little water.

No. 173—Rialto Building, Corner New Montgomery and Mission Streets. 680 feet deep, last 400 feet in serpentine. Showed very little water except in the surface sands.

No. 337—Western Sugar Refinery, Humboldt and Louisiana streets. 500 feet deep, all in serpentine. Not enough water to keep well tools wet.

No. 365—California Tallow Works on Evans Street, between Lane and Keith streets. 280 feet deep, all in serpentine. Capacity of well about 700 gallons per day.

As a general conclusion, it is believed that no appreciable amount of water is absorbed by, nor is there any probability of obtaining water from the original Franciscan rocks.

Practically all of the waters at present drawn from underground sources are obtained from the Terrace sands and any additional development must be confined to the same.

On pages 161 to 166 inclusive, are shown additional geological sections, together with enlarged sections showing probable extent and depth of the Terrace sands and roughly the elevation of the underground water table.

Tests of Capacity of Wells

Pages..............137–145

Capacity of Wells

TESTS

During the canvass of the various wells some information was obtained relating to capacity. Much of this information was obtained from the engineers at the various plants. As a general rule, the data was given from memory and of the information so gathered, only that thought reliable are presented.

As a check on these data and in order to throw more light on the question of capacity of wells in various localities, additional tests were made by this office and these tests, together with the information on tests gathered from the field canvass are presented in tabular form on following pages.

These tests cover a range of capacity per well from 1,200 gallons per hour for well No. 265 (Jessie Street, west of 4th Street) to a yield of 9,700 gallons per hour for the well of the County Line Water Works, No. 206 (Corner Leland and San Bruno Avenues) and a range of lowering the water table due to pumpage, from 6 ft. for well No. 36 (on Anza Street, between 5th and 6th Avenues) to 71 ft. for well No. 147 (near 17th and Folsom Streets).

Except for well No. 259-C (where the pumping is continuous) these tests are for periods of pumping of from 2 to about 17 hours.

During the tests, in addition to the data necessary for determining the volume and rate of pumpage, a record was kept of the height of the water in the well. The water heights were usually recorded every 10 or 15 minutes but where the fluctuations were material, they were taken more often.

At the conclusion of each test, a record of the return or rise of the water table in the well was taken and the "curve of rise" plotted.

The measurement of the height of water in deep well pumps is at best a difficult matter, first, on account of the difficulty in access to the well and second, on account of the rapidity of the fluctuations. It has been noted that the bed plates of the deep well pumps, as a general rule, cover the entire casing of the well and access to the well is only possible through a small opening from 1 inch to 1¼ inches in diameter. To meet these conditions, the apparatus, of which a sketch is shown on the following page, was devised and it gave very satisfactory results. It was particularly convenient in obtaining the data for the "curve of rise." The rate of rise of the water table was obtained as follows:

Immediately after pumps were shut down, the cork floats were raised one foot and the time of the electric connection, as recorded by the "buzzer" gave the time of rise to the first foot. The cork float was then raised to the next higher foot, etc.

The details of the state of the water table during the tests, and the "curves of rise" or return of the water table after pumps were shut down, while very instructive are not here presented on account of the very general lack of detailed information as to the well casings—the location and extent of perforations, etc.

TESTS IN DETAIL.

County Line Water Works, Well No. 206 (Corner Leland and San Bruno Avenue—Visitacion Valley). Elevation 34 feet.

Two tests were made by this office, one on March 24, 1913, and the second on April 10, 1913.

On March 24th, the total amount pumped was about 94,000 gallons and on April 10th, the total amount pumped was about 58,000 gallons.

The well is a 20-inch driven well. The depth to pump is 70 feet. The original depth was 148 ft. 8 in. and was tested with an air lift previous to its purchase by the City. The data on this test could not be obtained. In removing the air lift equipment from the well, a steel collar which held in place the discharge and air pipe became lodged at a point about 100 feet from the surface. In order to remove the air pipe equipment, this collar was shot off with dynamite. Since that time it has not been possible to get tools below the point where the collar was dynamited and the well having been used continuously since that time, it is very probable that the lower 48 feet are now filled with sand. The present depth of the well is therefore taken as 100 ft. The casing is not perforated and therefore all the water must enter through the bottom of the well at the 100 foot depth.

The equipment of this plant consists of a 9¾″ x 16″ single-acting Deane deep-well pump and a triplex double acting 6½″ x 8″ Booster pump, both of which are driven from the Jack shaft operated by a 35 H. P. electric motor. The speed of the pumps is quite uniform. The deep well pump operating at 35 strokes a minute and the triplex pump operating at 30 strokes a minute. The deep well pump discharges into a concrete chamber capacity about 1,600 gallons, from which it is lifted by the triplex pump to the County line reservoir, elevation

417 ft. The elevation of the concrete receiving tank is 34 ft., the net working head of the triplex pump is 383 ft. allowing for friction the pumping head is 173 lbs. per square inch.

Pump leathers in these two pumps are replaced about every 6 weeks. Both tests were made when these leathers were in about their average condition.

The actual capacity of the pump was determined by counting the strokes and measuring the actual volume pumped into the small concrete receiving tank. These two tests showed an average slippage of about 10 per cent.

It is believed that the equipment at the County Line Water Works receives more than average care and attention and the slippage on the other tests, except for the Crocker well, which was actually measured and also found to be about 10 per cent, is probably considerably higher.

In calculating the capacity of wells from pump displacement and speed, the slippage was generally taken at about 15 per cent.

When pumping at the rate of 9,000 gallons per hour or over, the water table drops from 16′ to 61′, where it remains constant.

During the period of this test which was about seven hours, the County Line Water Company's well lowered from 16 feet to 61 feet and well No. 229, about 1,000 feet S. E. towards the Bay, at which point the ground surface elevation is about 0, the water table dropped from 0 to -7.7.

Well No. 116—(Dairy Delivery Company, 19th and Guerrero Streets). Elevation 40 ft. Test made by this office on March 19, 1913. Plant here consists of a 10″ driven well, 150 feet deep, character and amount of perforations unknown.

The pumping equipment consists of an air lift, the air being supplied by a 10″ x 8″ x 10″ Giant air compressor—80 lbs. steam, 35 lbs. air under full load. The air is supplied to the well by a ¾″ pipe, the discharge pipe being 3″ in diameter. The air pipe extends to 135 feet below the surface of the ground. The water is discharged from the air lift to a small settling tank about 10 ft. above the ground, from which it is lifted into the higher tanks about 50 ft. above the ground by an automatically controlled 3″ centrifugal pump. The arrangement of the tanks was such and the draft therefrom so great, that it was not possible to measure the actual amount pumped during the period of the test but the rate of discharge was determined for various periods during the time of the test. Throughout the period of the test, an accurate record of the water table was kept and when the plant was shut down, the rate of rise of the water table was determined.

The water in the well dropped from 35 ft. below ground surface at 7 a. m., the beginning of the test, to 76 ft. at – a. m., and then to 80 ft. at 2 p. m., where it remained constant, when the lift is discharging at the rate of 34 gallons per minute, or 2,040 gallons per hour.

Well No. 15—(Crocker well, corner Mission and Templeton Streets). Elevation 320 ft. Test made May 6, 1913, by this office.

This is a double casing (24″–20″) driven well, 200 feet deep.

Casing perforated from 80 ft. depth to the bottom. The outer casing or curbing, 24″ in diameter, extends to a depth of 80′ below the surface of the ground and the space between the outer 24″ casing and the inner 20″ casing is filled with cement mortar. The 20″ casing is perforated for the length below the outer casing or from 80 to 200 ft.

The equipment of this plant consists of an 8″ x 24″ double acting deep well pump and a triplex Booster pump, both of which are driven by a 40 H. P. gas engine.

The deep well pump, because of some defect, does not double act; except for a few minutes at the start this pump single acted throughout the test. The pump is 148 ft. from the ground surface.

The deep well pump discharges into a small concrete receiving basin from which it is lifted by the Booster pump to the storage tanks located on the hills to the south of the plant. The capacity of the pump was obtained by counting the strokes and measuring the volume delivered to the small receiving tank. This measurement was made three different times during the period of the test and the three separate measurements gave a very close check.

These measurements showed a pump slippage of about 10 per cent. During the rest of the period of the test, the volume of pumpage was obtained by counting the pump strokes and applying the slippage of 10 per cent to the pump displacement.

Well No. 132—(Center well—N. W. Cor. Folsom and 16th Streets). Elevation 7 ft. Test made by this office March 21, 1913.

There are two 12″ diameter casing driven wells which are connected to a brick cistern 25′ net diameter and 36.4′ deep, character and amount of perforations unknown. The water is drawn from the main brick sump by a 10″ x 14″ stroke, double acting steam pump, operating under an average steam pressure of 60 pounds per square inch. The water is pumped from the brick cistern to two 30,000 gallon tanks about 54 feet above the ground, located along side of the cistern and just over the pumping plant.

The normal depth to water during the time of the test was about 26.4 feet and from the ground to the bottom of the tanks, as just given, is 54 feet. The tanks themselves are about 13 feet in depth. The average pumping head is about 86 feet. This plant is operated from two to four hours per day, generally in the afternoon. During the period of the test, which was 1 hour and 35 minutes, the amount of water was measured in the two receiving tanks. To this was added an estimated amount withdrawn from the tanks through the regular service pipes, during the period of the test. This estimated amount was based on observation made during the period of about 10 hours, both preceding and following the test and as the amount is comparatively small (less than 2,000 gallons) the results are substantially correct.

The total amount of water pumped during the period of the test, which was 1 hour and 35 minutes, was 32,060 gallons. The amount withdrawn from the cistern storage was 26,260 gallons and the amount of water delivered to the cistern from the two wells during the period of the test, was 5,800 gallons.

For the purpose of obtaining the range of influence upon the water table, caused by its lowering at the Center well, only one well in the vicinity which could be measured, was found, (Well No. 133 at 17th and Folsom Streets) located about 200 ft. distant from the Center well During the period of the test (1 hour and 35 minutes) the Center wells lowered 7.8 feet and Well No. 133 lowered .6 of a foot.

Wells Nos. 154-a, b, c and d—(Galland Laundry, 8th and Folsom Streets). Elevation 14 feet. Test made by this office May 7, 1913.

Size of Well	Depth of Well	Depth to Pump	Size of Pump
a..........20″	a..........207′	a...........170′	5″ x 18″ double acting
b..........20″	b.........200′	b..........170′	5″ x 18″ double acting
c..........18″	c..........170′	c...........130′	6″ x 15″ single acting
d..........10″	d.........168′	d..........119½′	5″ x 16″ single acting

These four wells are located in a space about 50 x 200 ft. and are fairly evenly distant from each other. All four wells discharge into a large concrete sump under the floor of the building, from which the water is pumped by means of a 4″ centrifugal pump, electrically driven, to several storage tanks, (total capacity 60,000 gallons) 62 ft. above the sump. It was not possible to make separate tests for all of the wells. The total capacity of the four pumps was obtained by measuring the actual amount pumped into the large concrete sump. The water table at all but one of the wells was observed at various times during the period of the test, and at one of the wells it was taken continuously during the period of the test.

The fluctuations of the water table as measured at the four wells was quite erratic, and quite frequently during the period of the test it was observed that the wells actually rose at times when the pump speed was increased, and frequently the wells were falling when the pump speed was decreased, etc. This is due to influences from adjacent wells. The amount of water being pumped in this immediate neighborhood is proportionately large. The four wells of this test are pumped on an average to the extent of 100,000 gallons per day. Well No. 259-c (National Ice Company, Langton Street, between Bryant and Harrison Streets), pumps 144,000 gallons per day. The Metropolitan Laundry from No. 156 (7 wells), on Harrison Street, between 7th and 8th Streets pumps about 275,000 gallons per day. The few wells just mentioned, besides other large wells in the immediate vicinity, pump quite continuously during the day and the early part of the evening. This quite naturally makes the determination of the water table during the pumping, quite difficult.

Well No. 377—(St. Joseph's Orphanage, Corner Gaven and Merrill Streets, on Islais Creek S. of San Bruno Avenue.) Elevation 28 ft.

Test made by this office March 10, 1913.

The source of water is a large earthen sump about 100′ in diameter and about 6 or 7 feet deep, fed by springs which come out at the terrace serpentine contact. The sump is located on the edge of Islais Creek and about 8′ above. The waters are exposed to the sunshine and therefore contain a heavy growth of algae. This water has been analyzed (see page 153.)

The pumping plant consists of a duplex steam driven, double acting pump, 10″ x 5″ x 10″ with an auxiliary wind driven 5″ x 12″ double acting pump. The steam pump operates at an average speed of 32 rpm., which with an allowance for slippage, gives a capacity of about 12,500 gallons per hour.

This plant is operated from four to five hours daily, pumping on an average about 60,000 gallons per day.

The water from this sump is pumped through a 4,400-foot 4″ force main to two 40,000 gallon wooden tanks, elevation about 300′, also to a 85,000 gallon covered reservoir, elevation 180 ft.

The other tests given on the tabulation, pages 151 to 153 inclusive, are from information obtained during the field canvass and it is thought that the information presented is quite reliable.

Well No. 159—(Ruffino & Bianchi, corner 6th and Bryant Streets).

Elevation 6 ft.

Test made by City Engineer's Office, February 15, 1911, in connection with studies for locating a fresh water supply for the High Pressure Fire System.

The data in connection with this test is quite meager and that given on the tabulation following, is all that is now available. This well has since been abandoned and is now filled.

Well No. 503—(Owned by San Francisco—located in Balboa Park—near San Jose and Ocean Avenues).

Elevation 173 ft.

Test made by this office May 10, 1913.

This is a 14″ driven well, 102′ deep; depth to pump 60 feet. Normal depth to water is 45′, and when being pumped at the rate of 7,000 gallons per hour, the water table drops to 57′, or a distance of 12′.

The pumping plant, which is new, was installed during the early part of May. It consists of a 6″x 12″, double acting, Luitweiler pump, driven by a 15 H. P. electric motor. The speed of the pump is quite uniform, and is 40 rpm. During the period of the test, the speed of the pump was frequently observed and frequent measurements were made of the elevation of the water table. The pump displacement at the observed speed, gives a capacity of about 7,500 gallons per hour. Allowing about 6% for slippage, gives a capacity of a little over 7,000 gallons per hour. The capacity has been taken as 7,000 gallons per hour.

During the period of the test, which lasted 8 hours, the water table dropped from the normal depth of about 45′ to 57′, in a period of about 5 hours, and it remained constant at 57′ for the remaining three hours.

Well No. 36—(French Hospital on Anza Street between 5th and 6th Avenues).

Elevation 176 feet.

Test made by this office, May 7, 1913.

This is a 22″ casing, driven well, 154′ deep; the character and amount of perforations are unknown. Pumping plant consists of a steam driven, double acting, 7″x10½″ horizontal surface pump. The capacity of this well was determined by observing the speed of the pump and making a correction of 15% to the piston displacement to allow for slippage. This test was extended only for a period of about 2 hours, and during the period of the test, the water table remained quite uniform at 32′ below the surface. The normal depth to water, as observed by the engineer at the plant, is about 26′ below the surface of the ground.

Well No. 512—(Garrissino—Cor. Whipple and Huron Streets, near Balboa Park). Elevation 275′–290′.

This well is now being pumped at the rate of about 140,000 gallons per day. Casing perforated from 80′ depth to bottom (depth 180′ to rock) or 100′ perforated.

Well No. 147—(American Steel and Wire Company, Corner 17th and Folsom Streets).

The test of this well was quite extensive and extended over a period of about a week, but the pumping periods were only about 9 hours per day. The present draft from this well is about 9,000 gallons per day. The character and amount of perforations unknown.

Well No. 259-c—(National Ice Company, Langton and Harrison Streets). Elevation 7 ft. Depth to pump 190 feet.

This well is pumped continuously at the rate of 6,000 gallons per hour or a total of 144,000 gallons daily. The character and amount of perforations unknown.

Well No. 265—(The California Society of Pioneers, Jessie Street, west of Fourth Street). Elevation 25 feet.

This well is pumped at the rate of about 1,200 gallons per hour 15 hours per day, or 18,000 gallons daily. Character and amount of perforations unknown.

Well No. 279—(Riverdale Creamery, near Divisadero and O'Farrell Streets). Elevation 145 ft.

This well was pumped at the rate of 1,800 gallons per hour for about 17 hours a day, or a total of about 30,000 gallons daily. Character and amount of perforations unknown.

Well No. 295—(Mt. Zion Hospital, Corner Post and Scott Streets). Elevation 127 feet.

This well is not yet in use, but has been tested to yield about 2,500 gallons per hour. Character and amount of perforations unknown.

Well No. 301—(La Grande Laundry, on 12th Street, between Folsom and Howard Streets). Elevation 16 feet.

Three wells, pumped at the combined rate of 9,000 gallons per hour on an average of 9 hours per day, giving a total yield of about 80,000 gallons per day. Character and amount of perforations unknown.

Well No. 288—(S. F. Laundry Association, Turk and Fillmore Streets.) Elevation 100 feet.

Three wells pumped at the combined rate of 8,000 gallons per hour for about 9 hours daily, give a capacity of 72,000 gallons daily. Character and amount of perforations unknown.

On the following pages are presented in tabular form, the tests just enumerated.

TESTS OF WATER YIELD OF SAN FRANCISCO WELLS

NAME	No.	LOCATION	Date of Test	Test Made By	Size of Well	Size of Pump S-Single D-Double	Total Depth (Feet)	Depth to Water		Total Yield at Depths as per Col. 10 Gals. Hr.	Yield per Ft. of Drop of Water Table Gals. Hr.	Remarks
								Normal (Feet)	With Yield as per Col. 11 (Feet)			
1	2	3	4	5	6	7	8	9	10	11	12	13
Municipal Well............	206	Leland and San Bruno......	Mar. 24, 1913 April 10, 1913	City Eng.	20″	9¾″x16″-S	100	16	61	9700	215	Total depth was originally 149′ but now filled to 100′.
Dairy Delivery Co..........	116	19th and Guerrero..........	Mar. 19, 1913	City Eng.	10″	3″ Disch. Air Lift ¾″ Air	150	35	80	2040	45	
Crocker Well..............	15	Mission and Templeton......	May 6, 1913	City Eng.	20″	8″x24″-D	200	140	168	4230	176	This double acting pump works as a single acting pump practically all the time.
Center Well................	132	N. W. Folsom and 16th.....	Mar. 21, 1913	City Eng.	2-12″ 1-24′ dia.	10″x14″-D	154 36.4	26.4	34.2	3500	450	
Galland Laundry...........	154d c b a	8th and Folsom Sts.........	May 7, 1913	City Eng.	10″ 18″ 20″ 20″	5″x16″-S 6″x15″-S 5″x18″-D 5″x18″-D	168 170 200 207	....	.... 156 168	.... 10500	....	This data is for all 4 wells combined.
Ruffino and Bianchi's.......	159	6th and Bryant............	Feb. 15, 1911	City Eng.	10″	....	......	85.4	....	2140	....	Now abandoned.
Balboa Park...............	503	San Jose and Ocean Aves....	May 10, 1913	City Eng.	14″	6″x12″-D	102	45	57	7000	583	New pump installed May, 1913.
French Hospital............	36	Anza bet. 5th and 6th Aves...	May 7, 1913	City Eng.	22″	Duplex 7″x10½″-D	154	26	32	3200	866	See Analysis Board of Health.
Carrissino.................	512	Whipple and Huron	May 6, 1913	Carrissino	14″	7½″x15″-S.	180	80	97	10000 (Including windmill)	588	Also a spring of 200,000 gals. per 24 hours.
St. Joseph's Orphanage......	377	Gaven and Merrill..........	Mar. 10, 1913	City Eng.	Spring	Duplex 10″x5″x10″ D	......	0	....	12500	....	See Analysis Board of Health.
American Steel & Wire Co....	147	17th and Folsom...........	Feb. 14, 1913	Am. Steel & WireCo.	16″	2¾″x16″-S	94	6	77	2400	34	
National Ice Company......	259a 259b 259c	Langton and Harrison......	Aug. 1912 Mar. 1913 Feb. 20, 1913	Eng. at plant	24″ 24″ 20″	.... 5″x20″-S	210 220	.... 35.?	....	5000 6000	....	Now abandoned. Test in Aug., 1912. Pump never shuts down.

TESTS OF WATER YIELD OF SAN FRANCISCO WELLS

NAME	No.	LOCATION	Date of Test	Test Made By	Size of Well	Size of Pump S-Single D-Double	Total Depth (Feet)	Depth to Water		Total Yield at Depths as per Col. 10 Gals. Hr.	Yield per Ft. of Drop of Water Table Gals. Hr.	Remarks
								Nor-mal (Feet)	With Yield as per Col. 11 (Feet)			
1	2	3	4	5	6	7	8	9	10	11	12	13
Calif. Society of Pioneers....	265	Jessie St., W. of 4th........	April 1913	Eng. at plant	12″	5″x12″-S Steam	201	24	....	1200	....	
Riverdale Creamery.........	279	Near O'Farrell and Divisadero	Mar. 3, 1913	Eng. at plant	12″	5½″x24″-S	99.5	30	....	1800	....	Troubled with sand.
Mt. Zion Hospital..........	295	Near Post and Scott........	April 24, 1913	Eng. at plant	14″	5¾″x24″-S	147	0	21	2500	119	Tested in 1912 to 2500 with a centrifugal.
La Grande Laundry........	301	On 12th, bet. Folsom and Howard.................	Mar. 4, 1913	Eng. at plant	20″ 20″ 16″	7″x18″-S 5″x16″-S 4½″x12″-S	150 150 150	50 50 50	80 80 80	9000	300	Data is for all 3 wells.
S. F. Laundry Assn.........	288	Turk and Fillmore..........	Mar. 5, 1913	Eng. at plant	10″	6″x5¾″x6″	60	12	30	8000	445	For 3 wells.

In this connection it is of interest to note the rate and amount of water drawn from the drainage area just south of San Bruno Mt., extending from Colma to the town of South San Francisco.

The drainage area is about 13½ square miles. Average draft from wells about 6,000,000 gallons daily.

(SEE PRELIMINARY REPORT ON THE NECESSITIES OF A METROPOLITAN WATER DISTRICT, BY CHAS. D. MARX, 1912.)

(P. 27—Well No. 01) 270′ deep—10″ bored.

"This well is pumped at the rate of 100,000 gallons per day. The static water level in this well is 90′ below the ground surface. "

"The elevation of the ground is 250′ above sea level."

(P. 29—Well No. 04) 270′ deep—12″ bored.

"This well belongs to the Masonic Cemetery and is not a very good well. They are now pumping 115,000 gallons per day. The elevation of the ground surface is 150′ and the static water level is 150′ below the surface."

(P. 29 and 30—Well No. 05) 230′ deep—12″ bored. Well No. 06 250′ deep—14″ bored.

"The above logs for 05 and 06 cover the wells that are located at Cypress Lawn and Holy Cross Cemeteries. The pumping from eleven wells located at this point is approximately 1,000,000 gallons per day in the dry months. The elevation of the ground surface is about 90′ above sea level. The depth of the static water level is 15′ and to the water level when pumping 1,000,000 gallons per day, is 40′."

(P. 32—Well No. 08) 230′ deep and 14″ bored.

"The elevation of this well is approximately 90′ above sea level. The static water level is 40′ below the surface. This well is now being pumped at the rate of 7,000 gallons per hour for an 18 hour day." This would give 126,000 gallons per day.

(P. 33—Well No. 011) 350′ deep.

"At this point there are 9 wells that are being used by the South San Francisco Water Company. To obtain a supply of over 40,000,000 gallons per month during the Summer months. * * * . The elevation of the ground at these wells is about 12′ above sea level. When not pumping the water will rise about 20′ above datum. When all of these wells are discharging about 43,000,000 gallons per month, the water level drops to about 75′ below the ground surface or about 65′ below sea level. These wells have been affected by the increased pumping up stream at the cemeteries."

Conclusions from Capacity Tests

From the tests just given, scattered throughout an area of about 36½ square miles (about 23 square miles in San Francisco County and 13½ square miles in San Mateo County) comprising 7 different drainage areas, it has been shown that large capacity wells exist in each of the drainage areas. This indicates a fairly uniform vertical distribution and porosity of the clays and sands of the terrace formation. The well logs in general confirm this.

From a study of the well tests just given and a general study of all the wells canvassed, the conclusion seems to be warranted that the larger diameter wells, say from 16″ to 20″ in diameter and over, give the most satisfactory results. In loose water bearing strata, free from quicksand or shifting material, a 12″ or even a 10″ well sometimes can be pumped to as high a rate as 100,000 gallons per day, but that is the exception rather than the rule.

The most recent practice in deep well boring within the City, particularly for wells intended for large draft, have been from 20″ to 24″ double casing, the inner casing being generally from 2″ to 4″ smaller than the outer casing. The space between the outer and inner casing being filled with concrete to guard against the seepage of the surface waters and protect the outer casing from collapse.

This seems to the writer the best practice as it is very important to guard against contamination of the well from surface seepage. A 20″ well located in a region of fairly good water strata (such as are found in this County) can quite generally be depended upon to yield 100,000 gallons per day.

There are many wells in the Mission Creek District in regions of heavy pumpage which yield this amount. In other districts there are many wells which are or could be made to yield 100,000 gallons daily.

The County Line Well, No. 206, located in Visitacion Valley, was pumped for an average of 75,000 gallons per day during the month of April. This for an average pumping day of 9 hours.

The Crocker Well, No. 15, located on the Mission Road just across the County line, shows an abundance of water and has been tested to yield over 4,000 gallons per hour, with a larger pump, this well could be made to yield over 100,000 gallons per day.

The Balboa Park Well, No. 503, has been tested to yield 7,000 gallons per hour or at the rate of over 160,000 gallons per day.

The French Hospital Well, No. 36, in the Richmond District, near 6th Avenue, is now being pumped at the rate of 80,000 gallons per day and tests show that it could be safely drawn for over 100,000 gallons per day.

Estimate of Additional Yield

Pages................146–150

Estimate of the Additional Yield of Water to be Obtained from the Underground Waters of San Francisco County

In studies of underground sources of water supply considerable weight is generally given to consideration of the water-bearing strata. The data at hand permits the making of only a rough estimate of the volume of water-bearing materials. At best, this method of making an estimate of the probable yield from underground sources is generally only a rough approximation.

The difficulties lie in determining the amount and rate of soil absorption, the rate of flow through the saturated soils, the total volume of saturated soils, and lastly the amount that can be withdrawn from the saturated strata.

Another difficulty in this particular case lies in determining the area exposed to surface absorption.

Studies were started to determine the various factors above mentioned, but many difficulties were encountered and another method has been resorted to.

In most cases the draft from the various areas is fairly heavy, and in some instances probably approaches pretty near to safe ultimate yield. In general, the conditions throughout the county are sufficiently uniform to permit of a reasonably safe estimate of the further development of the underground waters, with the present draft as a basis.

It has been stated that practically all the waters now being obtained from underground sources are drawn from the terrace sands, and tests in connection with data gathered in the field canvass have shown that a good yield is to be expected from a well penetrating the terrace formations to the extent of about 100 feet below the natural water table.

CAPACITY: Tests were made on wells in various localities (See pages 137 to 145 incl.) Records were kept of the amounts pumped, the position of the water table before pumping started, the position of the water table during the period of pumping and the rate of return of the water table after the pumps were shut down.

These tests were very instructive and led to a better understanding of the problem, but a detailed co-relation of these tests was not possible because of the lack of essential information concerning the wells. On only one of the tested wells (the Crocker well), was it possible to get complete information as to the size and extent of the perforations. In only two cases was it possible to get data on the influence of the test pumpage upon the water table in the vicinity—at the Center well and at the Municipal County Line well.

During the time of other tests attempts were made to make general observations on the water table in the vicinity of the tests but in no case was this possible. Most of the wells are sealed by the deep well pump equipment. Frequently the pumpage in the vicinity of the test was so heavy as to make any determination as to the position of the water table very difficult.

These well tests in connection with the data gathered on the field canvass made it possible to make a fairly close estimate of the amounts of water now being drawn from the underground sources.

These data are presented in considerable detail on pages 19 to 101 inclusive and well tests, pages 137 to 145 inclusive.

A study of this well data in connection with the well profiles presented on pages 161 to 166 it is believed are the best criterions on which to base estimates of additional yield to be obtained at various localities to be mentioned later.

The well tests and general data indicate that the water strata are generally loose or porous and if they extend about 100 feet in depth below the water table, a good yield can be expected.

The amount of drop in the water table, due to pumping was observed in connection with the tests and was found to be quite variable. (See notes on tests, pages 138 to 141 incl.). The drop, however, as recorded in the tests, was not in each case a direct index of the tightness of the water-bearing strata. At the County Line well, for instance, the casing is not perforated and the drop there recorded is of course considerably more than it would be, were the casing perforated.

Taking all the influences into consideration, it is believed that the data herewith presented warrants the conclusion above stated that a well penetrating the terrace formations to a depth of about 100 feet below the water table will give a fairly good yield.

In order to more clearly present the rate of draft from the areas now being heavily drawn upon, the rates for the various areas have been reduced to million gallons per square mile and inches depth on area of water shed annually. (See also map, page 160).

As very briefly mentioned under the discussion of the geology of the San Francisco peninsula, it is believed that no appreciable amount of waters are absorbed or retained by the original rock formations and it is therefore assumed that the underground waters are derived from and confined to the natural physical drainge areas.

In the following discussion, the drainage areas were obtained by planimeter from the topographical map—Map No. 3. Only such portion of the drainage area has been considered in each case as was actually tributary to the underground supply from which the waters under consideration were drawn.

The mean seasonal rainfall of San Francisco County (Seasons September to August inclusive) 1849–50 to 1912–13 (64 seasons—last season not quite complete) is 22.59 inches.

During the period of observation, the rainfall station has been located at various points in the Mission Creek Area. It is now on the roof of the Merchants Exchange Building (14 stories).

It is believed that the rainfall on the Pacific slope of the County—Richmond and Sunset Districts—is somewhat higher than that given.

For municipal purposes, the true yield of sources of water supply, is the safe, dependable yield of that source under the most severe conditions imposed by nature.

The sources of San Francisco underground water are supplied of course by the ground absorption of the rains. These rains occur usually from December to March inclusive, during which period the underground waters get their supply to carry them over the dry months following.

These underground waters are constantly moving or flowing from the high levels to points lower, and ultimately if not interrupted discharge into the bay or ocean.

The rate of movement or flow is quite slow, varying from about 10 feet per day to 30 feet per day or more.

This is an extremely low rate of flow and always leaves in the ground a considerable supply of water. Even at the end of our long dry summers the supply is considerable. Because of this storage or carrying over of waters absorbed in previous years to years following, the best test of the safe yield of these underground waters is a measure of the amount that could be obtained during and just following the period of extremely low rainfall.

The rainfall table following shows that during the past two seasons, 1911-12 and 1912-13, the rainfall has been lower than any other two seasons, excepting 1862-63 and 1863-64, for which latter two seasons the rainfall was one inch less than the former. It is therefore seen that the amount of water available during the past two seasons is the safe dependable yield.

SEASONAL RAINFALL OF SAN FRANCISCO.

Season from September to August, inclusive.

Data from U. S. Weather Bureau. Elevation 191′ (May, 1913).

Season	Rainfall Inches	Season	Rainfall Inches	Season	Rainfall Inches
1849–50	33.10	1869–70	19.31	1889–90	45.86
51	7.44	71	14.13	91	17.68
52	18.44	72	30.77	92	18.41
53	35.30	73	15.74	93	21.77
54	23.84	74	24.64	94	18.45
55	23.75	75	20.56	95	25.71
56	21.68	76	31.21	96	21.37
57	19.94	77	11.04	97	23.30
58	21.97	78	35.17	98	9.38
59	22.03	79	24.46	99	16.87
1859–60	22.46	1879–80	26.63	1899–00	18.47
61	19.51	81	29.86	01	21.17
62	49.27	82	16.14	02	18.98
63	13.74	83	20.12	03	18.28
64	10.29	84	32.42	04	20.67
65	24.52	85	18.12	05	23.37
66	22.93	86	31.50	06	20.61
67	34.92	87	18.82	07	26.00
68	38.84	88	16.75	08	17.36
69	21.35	89	23.85	09	25.54
				1909–10	19.52
				11	25.49
				12	14.03
				13	11.32

Lobos Creek Drainage Area

As generally indicated by the underground water elevations, this Creek receives waters from the drainage area of about five square miles, extending across Golden Gate Park to the ridge beyond the Almshouse. (See map page 160.)

The present flow of Lobos Creek is about 2,000,000 gallons daily and the amounts withdrawn by the Golden Gate Park Water Works, which lies within this area, is about 577,000 gallons daily. This amount of water, 2,577,000 gallons daily, or 515,000 gallons daily per square mile for a year (not including the amount drawn by several smaller wells), is equivalent to a depth of water of 10″ over the entire drainage area.

Bay View District:

Present draft from wells	537,500 gallons daily.
Drainage area	1.21 sq. miles.
Equivalent to 444,000 gallons daily per sq. mile.	
Annual draft equivalent to	9.1″ depth on area.

Visitacion Valley District:

Present draft from wells	294,300 gallons daily.
Drainage area	1.45 sq. miles
Equivalent to 203,000 gallons daily per sq. mile.	
Annual draft equivalent to over	4.00″ depth on area.

Excelsior and Ocean View Vicinity—Islais Creek District:

Present draft from wells	707,730 gallons daily.
Drainage area	4.1 sq. miles.
Equivalent to 172,000 gallons daily per sq. mile.	
Annual draft equivalent to over	3.6″ depth on area.

(This is used mostly for irrigation of vegetable gardens along Islais Creek.)

Mission Creek District:

Present draft from wells	3,357,750 gallons daily.
Drainage area, about	8.35 sq. miles.
Equivalent to 400,000 gallons daily per sq. mile.	
Annual draft equivalent to about	8.4″ depth on area.

The total area of the City from which any material amounts of underground waters are drawn, is about 23 square miles, from which the mean daily draft is about 8,500,000 gallons, or at an average rate of about .37 million gallons daily per square mile, which annually is equivalent to about 7.7″ depth on area.

This is an unusually large amount of water to be withdrawn from so small an area and it must be borne in mind also that a very large proportion of this area, particularly in the Mission Creek District, is quite solidly built up and nearly all the streets are paved. In other districts the built-up area with paved streets is also fairly large. In some districts it is quite reasonable to assume that a fair amount of water is returned through soil absorption from the irrigated areas, such as vegetable gardens, Golden Gate Park and other smaller areas. No estimate of this has been made.

From the drainage area just south of San Bruno Mountain, extending from Colma to the town of South San Francisco, an average of six million gallons daily are drawn from the terrace sands which are fed by the drainage of 13½ sq. miles. This is equivalent to nearly 445,000 gallons daily per square mile or about 9.3″ depth of water annually on the total drainage area.

SUMMARY.

Drainage Basin	Area Square Miles	Present Draft		
		Total Gals. Daily	Per Sq. Mile Gals. Daily	Ins. in Depth Annually on Total Area
Bay View	1.21	537,500	444,000	9.1
Visitacion Valley	1.45	294,300	203,000	4.0
Excelsior and Ocean View, Islais Creek District	4.1	707,730	172,000	3.6
Mission Creek District	8.35	3,357,750	400,000	8.4
Lobos Creek District	5.	2,577,000	515,000	10.7
Total in S. F. County, including areas in addition to that given	23.0	8,500,000	370,000	7.7
South of San Bruno Net Area	13.5	6,000,000	445,000	9.3

The most likely field for further development of underground waters in San Francisco County is in the Sunset District outside of the Lobos Creek Area; in the Richmond District and in the Excelsior and Ocean View District of Islais Creek.

Of the Sunset and Richmond Districts little is known, there being but few wells and the amount drawn from them is comparatively small. There is every indication, however, that a considerable amount of water can be developed in the locality.

The two Park windmills pumping from sumps draw an average of 137,000 gallons daily.

The following wells on the Lake Merced Tract just east of Sloat Boulevard show a fairly heavy draft.

Number	Diameter	Depth to Water	Depth of Well	Average Daily Draft	Average No. Daily Hrs. Pumped
82	20″	50′ to pump	125	45,000	15
82a	20″	50′ to pump	125	45,000	15
83	14″	60′	185	20,000	2½
84	12″	60′	150	30,000	5

Wells No. 82 and 82a are limited to a capacity of 3,000 gallons per hour by their pumps.

Along the Ocean front from Sloat Boulevard to Balboa Street, the water table is at about sea level.

Four profiles are presented on pages 161 to 166 incl., showing what is known of the water-strata and the water table.

These profiles while based on very meager data show at least that the terrace formation along the Ocean front is over 100 feet thick and there is every reason to believe that it extends considerably deeper.

Before any development is undertaken in this region, it will be advisable to sink several test holes to determine the extent of the water-bearing material.

There are two fairly well defined drainage channels in the Sunset-Richmond Area. One just north of and parallel to Golden Gate Park—draining toward the ocean. The other just north of Sloat Boulevard draining toward the Ocean. These small channels are more or less checked throughout their length by the shifting sand dunes. Water appears in several places in the channel north of Golden Gate Park and at Laguna Puerca in the channel just north of Sloat Boulevard.

Laguna Puerca like Mountain Lake on Lobos Creek is probably due to a substratum of clay and the clay silting of the porous sands thrown across the channels by the winds.

The elevation of Mountain Lake is about 130 feet, Laguna Puerca about 37 feet and Lake Merced, when full, about 20 feet. Referred to city base.

On June 3, 1913, Lake Merced water surface was at elev. 8.5, city base.

Conclusion:

In the light of what has been presented, it is believed that it is reasonable to expect a yield of about .4 of a million gallons per square mile daily from the Sunset-Richmond area.

This area is about eight and one-half square miles, giving an estimated yield of about 3.4 million gallons daily. (Say 3 millions).

As to the further development from other areas now quite fully developed, some further field work will be necessary to determine the best locations for development.

The following is a summarized estimate of the additional water development from the underground sources of San Francisco County.

Location	Estimated Possible Additional Development Gallons Daily
Sunset-Richmond	3,000,000
Richmond District—South of Mountain Lake	100,000
Islais Creek—Vicinity of Balboa Park	400,000
Islais Creek—Noe Valley Vicinity	100,000
Mission Creek District—at Jefferson Square, Columbia Square and Mission High School	200,000
	3,800,000

Bacteriological and Chemical Analyses of Well Waters

Pages................151–153

Brief Summary and Conclusions from the Chemical and Bacteriological Analyses

By R. P. McIntosh, Assistant Hydraulic Engineer.

These conclusions are based on the analyses of nine samples of water taken in San Francisco, May 13, 1913; the analyses made by the Board of Health are given below.

Sample No. 1—Taken at Gaven and Merrill Streets, from water supplying St. Joseph's Orphanage is, as noted in the report from the Board of Health, unsafe for drinking purposes without treatment. The high content of chlorine, nitrites, nitrates and Bacillus Coli present in one c. c. show probable sewage contamination at present and the high nitrate content would indicate (though not absolutely prove) that this contamination has been going on for a considerable period of time.

This condition is to be expected, more or less, since the water is drawn from a sump fed by a spring, and this is not protected so as to exclude surface drainage.

Sample No. 4—From Balboa Park shows B. Coli to be present in 10 c. c., a high nitrate content and fairly high count of total bacteria per c. c. These conditions in themselves, while they show a state of affairs which is undesirable, are not necessarily condemnatory when considered with the medium chlorine content and very low nitrite content. The nitrate (high) and nitrite (low) indicate that while the contamination at present is slight, it probably has been extending over a considerable period of time or was more or less strongly contaminated at some previous date.

The present source of contamination is probably due to some surface water which has found its way into the well from the park itself, where manure is spread on the grass as a fertilizer. The turbid color also suggests this.

Sample No. 5—From "The Dairy Delivery Company" at 19th and Guerrero Streets, showing B. Coli in 5 c. c. and a high amount of chlorine but with the low nitrite and nitrate contents, as well as a low count of total bacteria per c. c. shows the contamination to be of recent date and therefore not of a condemnatory nature. The source of contamination is unknown.

The statements made concerning Sample No. 5 also apply to Sample No. 7 taken at the French Hospital on Anza Street, between 5th and 6th Avenues. However, in this case the contamination is much less than for Sample No. 5 and in fact may be passed over without much comment. The nitrate content would tend to indicate possible contamination in the past.

Sample No. 6—From the Galland Laundry, 8th and Folsom Streets, shows many of the objectionable features noted in Sample No. 1, except in this case the medium nitrite and low nitrate contents would suggest only recent and more or less transient contamination. The high B. Coli count makes it a questionable source of supply for drinking purposes at present.

This well is 200 feet deep and the depth to water is 100 feet. Information regarding the casings and methods of protecting against the entrance of surface waters could not be obtained and the source of contamination is unknown.

The remainder of the samples show good water, especially the Crocker Well on Mission and Acton Streets and the well at 1424 La Playa Street.

From six examinations of water taken from the Golden Gate Park Sump in 1912, B. Coli was found twice, once in 10 c. c. and once in 1/10 c. c. The nitrites and nitrates are fairly high and on the whole these tests showed the waters to be of an unsatisfactory nature, though not absolutely dangerous for drinking purposes.

The source of contamination is probably due to surface waters finding their way into the sump, after having passed over the manure used as a fertilizer on the lawns.

From a large list of examinations made during 1907, 1908, 1909, 1910 and 1911 by the Board of Health, of various San Francisco well waters, no definite conclusions can be drawn, as in most cases the bacteriological analyses are missing and the chemical analysis alone is of practically no use in determining the quality of water for drinking purposes.

The analyses made on the waters from the County Line Well (Municipal Well) extending from September, 1912 to March, 1913, cover eighteen tests. Three of these analyses show B. Coli in 10 c. c. and three show B. Coli in 5 c. c. However, in each of these cases the content of chlorine, nitrites, and nitrates are comparatively low and in only one case is the total bacteria count exceptionally high. While these conditions are not all that could be desired, still the supply cannot be said to be unfit for drinking purposes in the light of the entire series of analyses.

The cause of contamination is probably due to surface water entering the well through the old casing which leaks more or less.

The result of all the analyses made up to date would indicate that in any localities where the City decides to sink a well, samples from several wells in that vicinity should be secured from time to time and a close record kept of the results of the analyses, depth to water and condition of the casing as nearly as possible. It is believed that if the well is deep and the casing tight so as to exclude the surface water, the supply will in general be good and the chance for contamination reduced to a minimum.

Analyses of San Francisco Well Waters

Made by the Board of Health—Samples Taken May 8th, 1913.

	Chemical Lab. Number	Bact. Lab. Number	Date Received	COLOR	Total Solids	Loss Ignition	Fixed Residue	CHLORINE	NITROGEN AS				Oxygen Consumed	On Ignition	Bacteria Per C C Agar ROOM TEMP.	Bacteria Per C C Agar 37°	Amount of Gas formed in Ferm. Tubes. Bile Media	Well No.	REMARKS
									Nitrites	Nitrates	Free Ammonia	Album. Ammonia							
1. St. Joseph's Orphan Asylum, Gaven and Merrill Sts..........................	686	10687	5/8/13	Turbid	637	342	295	104	.100	22.5	.014	.162	2.0	no Blk.	900	300	B. Coli present in 1 C.C.	377	Sump, fed by Springs.
2. Crocker Well, Mission and Acton Sts.....	687	......	"	Clear	193	74	119	34	none	5.0	.022	.096	.5	"	20	50	" " absent " 10 C.C.	15	200 ft. deep & 140 ft. to water.
3. L. Renner, Mission and Onondaga Sts....	688	......	"	"	707	344	363	133	trace	19.7	.008	.038	.8	"	100	50	" " " " 10 C.C.	595	50 ft. deep & 17 ft. to water
4. Balboa Park, on San Jose Ave...........	689	......	"	Turbid	545	276	269	77	"	21.9	.012	.052	.8	"	900	350	" " present " 10 C.C.	503	102 ft. deep & 45 ft. to water.
5. Dairy Delivery Co., 19th and Guerrero Sts.	690	......	"	Clear	826	278	548	160	"	11.05	.008	.056	1.0	"	50	300	" " " " 5 C.C.	116	150 ft. deep & 35 ft. to water.
6. Galland Laundry, 8th and Folsom Sts....	691	......	"	"	594	211	383	119	.006	2.95	.008	.026	.9	Blk. Sl.	200	250	" " " " 1 C.C.	154	200 ft. deep & 100 ft. to water.
7. French Hospital, Anza St., bet. 5th and 6th Aves............................	692	......	"	"	546	217	327	76	none	18.0	.012	.040	1.0	no Blk.	32	900	" " " " 10 C.C.	36	154 ft. deep & 26 ft. to water.
8. 1424 La Playa St., near Judah St........	693	......	"	"	204	28	176	27	"	1.03	.010	.026	.5	"	70	24	" " absent " 10 C.C.	65	35 ft. deep.
9. Alexander Russel on Great Highway.....	694	......	"	"	274	45	229	47	.002	4.80	.032	.030	.6	"	600	230	" " " " 10 C.C.	78	100 ft. deep & 23 ft. to water.

Costs of Well Boring and Well Casing

Pages..............154–157

Brief Summary of Cost of Well Boring and Well Casing in San Francisco and the Bay Region

By R. P. McIntosh, Assistant Hydraulic Engineer.

From the complete cost data on 16 wells driven in San Francisco obtained from Mr Lowe, a well borer in San Francisco, the average cost of a **12-inch well** with a **16-inch outer casing,** complete in all respects, ranges from $4.00 to $4.50 per foot.

The depth of these wells ranged from 140 to 205 feet, and the materials penetrated were the average encountered in the lower parts of the City, namely: mud, sand, hard and soft clays, gravel, etc., but not rock.

Complete cost data on 5 wells obtained from Mr. Wm. H. Haley, a San Francisco well borer, shows the cost of the same size well, penetrating the same materials, and from 120 to 195 feet deep, to vary from $3.60 to $4.00 per foot, including casing.

In each case the data covers wells bored during the years of 1907, 1908, 1909 and 1910.

The records of Rogers & Ough, well borers in the Bay District, show costs for 20-inch wells bored in Alvarado (Oakland side of Bay), to be as follows:

Diameter	Depth Feet	Cost	Cost Per Foot
20″	719	$5,073.50	$7.50 with casing, complete.
20″	197	1,332.00	6.77 with casing, complete.
20″	421	2,978.50	7.08 with casing, complete.
20″	260	1,745.00	6.72 with casing, complete.

A general basis of cost estimate by Rogers & Ough is given below.

Price for sinking 14-inch well, $3.00 per foot for the first 50 feet and 50 cents additional per foot for each 50 feet; 2 sizes surface casing, 18-inch and 22-inch, average price $4.50 per foot for 50 foot depth.

Twelve-inch well, $2.50 per foot for the first 50 feet and 50 cents per foot additional for each 50 feet; surface casing, two sizes, 16-inch and 20-inch, average price $4.00 per foot for 50 feet depth.

Ten-inch well, $2.00 per foot for the first 50 feet and 50 cents additional per foot for each 50 feet; surface casing, two sizes, 14-inch and 18-inch, average price of $3.50 per foot for 50 foot depth.

Sixteen-inch well, $3.50 per foot for the first 50 feet and 50 cents per foot additional for each 50 feet; surface casing, two sizes, 20-inch and 24-inch, average price $5.00 per foot for 50 foot depth.

Twenty-inch well, $4.50 per foot for the first 50 feet and 50 cents per foot additional for each 50 feet; two sizes of surface casing, an average depth of 50 feet at $6.00 per foot.

"(Estimate based upon two sizes of surface casing for 50 foot depth, besides well casing proper, includes cementing between casings.)" (No rock penetrated—Data from J. H. Dockweiler).

Costs of Casings

DATA FURNISHED BY W. W. MONTAGUE & COMPANY, SAN FRANCISCO

APRIL, 1913

DOUBLE CASINGS.

Size Inside Diameter	Number	Cost Per Foot	Remarks
10″	16	$ .63	Made from black or red steel sheets.
10″	14	.75	
12″	16	.76	
12″	14	.87	
14″	14	1.00	
14″	12	1.35	
16″	14	1.12	
16″	12	1.50	
18″	12	1.70	
18″	10	2.00	
20″	12	1.85	
20″	10	2.25	
22″	10	3.00	
22″	10	5.00	Galvanized Iron.

No. 16 U. S. Standard Gauge is 1/16″ thick.
No. 14 U. S. Standard Gauge is 5/64″ thick.
No. 12 U. S. Standard Gauge is 7/64″ thick.
No. 10 U. S. Standard Gauge is 9/64″ thick.

SINGLE CASING.

Size Inside Diameter	Number	Cost Per Foot	Remarks
10″	16	$ .47	Cost of shoe is not included. Made from black or red steel sheets.
10″	14	.50	
12″	16	.50	
12″	14	.60	
14″	14	.68	
14″	12	.68	
16″	14	.77	
16″	12	1.00	
18″	12	1.20	
18″	10	1.33	
20″	12	1.30	
20″	10	1.50	
28″	10	2.65	
28″	10	4.25	Galvanized iron.

The above costs do not include the perforations. From a 10″ to 18″ double casing, the cost of perforating is 12 cents per lineal foot and 5 cents per lineal foot for single casing, sizes 10″ to 18″; for a 22″ casing this cost is 25 cents per foot.

In general, the cost of galvanized pipe is about 40 per cent more than that made from black or red steel sheets, for No. 12 Gauge and lighter, and is about double for No. 10 Gauge and heavier.

The cost of shoes are as follows:

12″	$5.00
22″	8.00
28″	10.00

The double casing is made so that one joint slips half way inside of the other, and when in the well, forms a column of double thickness.

The single or collar casing is made with a 6″ collar on one end of each two foot joint, and when in the well, forms a column with a 6″ band around the casing every two foot joint.

The bid received by the City of San Francisco on the Almhouse well in May, 1913, was as follows, for the completed well, except the perforating of the inner casing:

First 40 feet below ground surface, 28″ outer casing, single with collar joints and made from No. 10 (9/64″) steel sheets—$18.00 per foot.

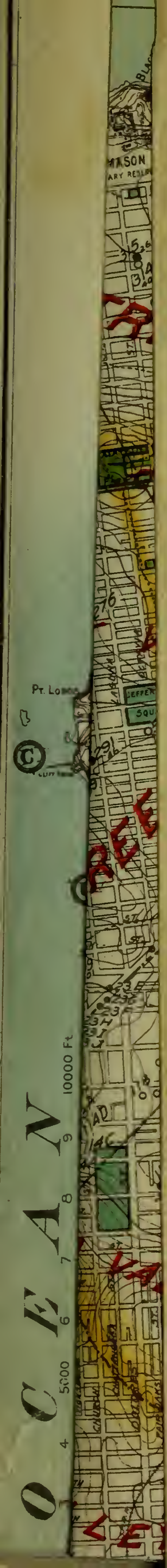
Second 40 feet, 22″ middle casing, double, and made from No. 10 (9/64″) steel sheets, the lower 40 feet of this casing to be perforated—$16.00 per foot.

Next 170 feet below the bottom of middle casing, 12″ wrought iron with screw and socket joints (not perforated)—$9.50 per foot.

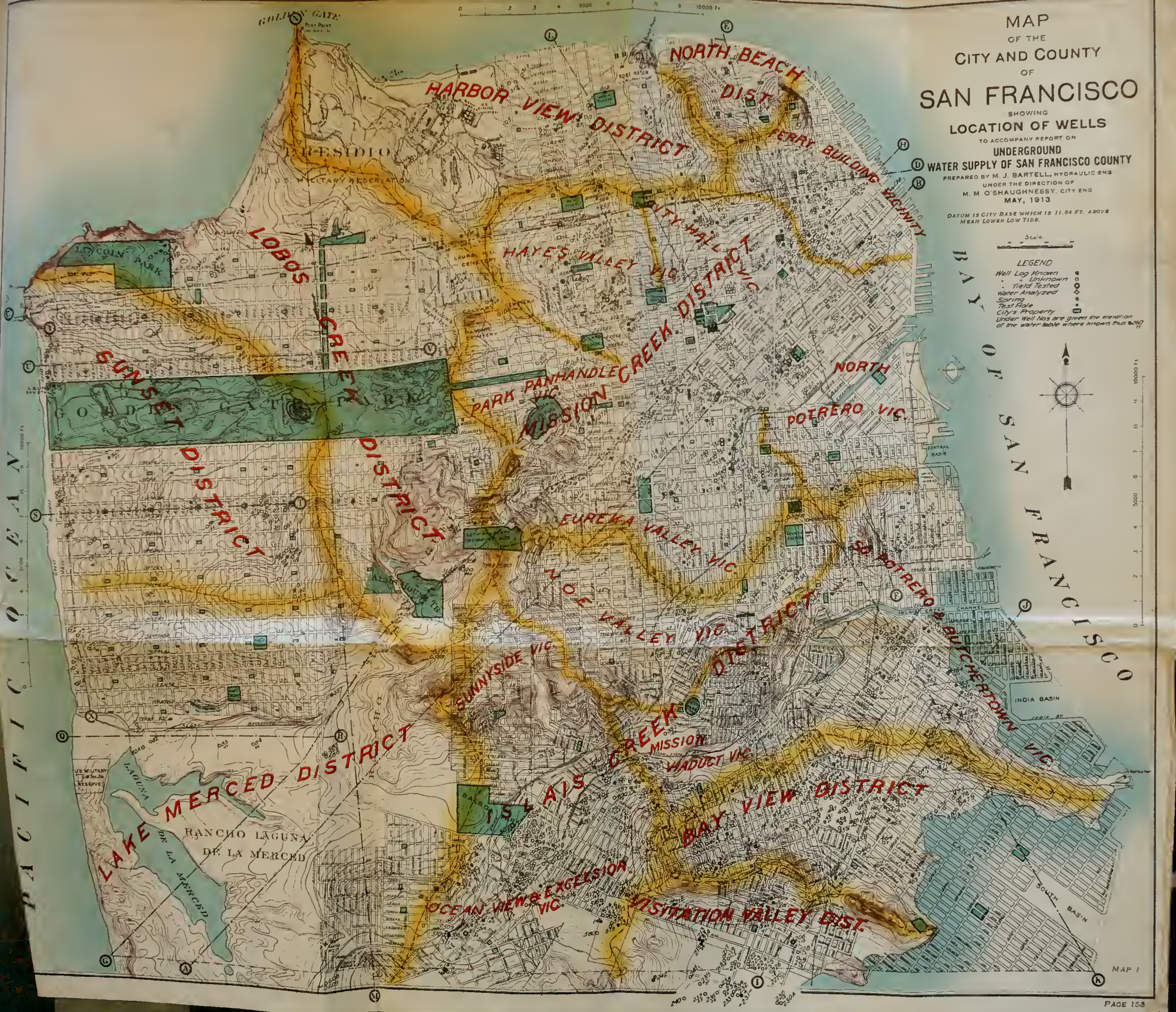
Remaining 200 feet of well, 12″ casing as above—$9.00 per foot.

Space between outer and middle casings to be filled with cement mortar and the space between the middle and inner casing to be filled with gravel.

The last 370 ft. ± of the inner or 12″ casing is in rock.

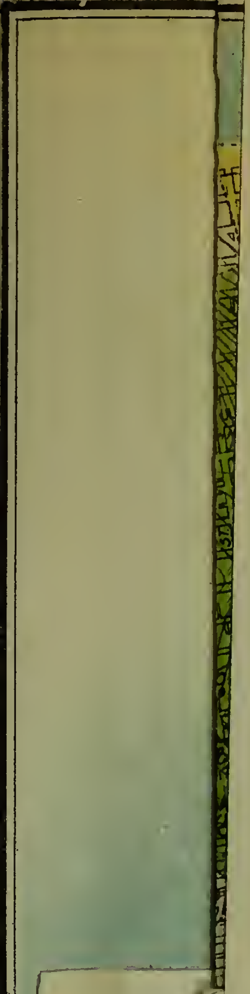

OCEAN
PT. LOBOS
MASON
10000 Ft
5000

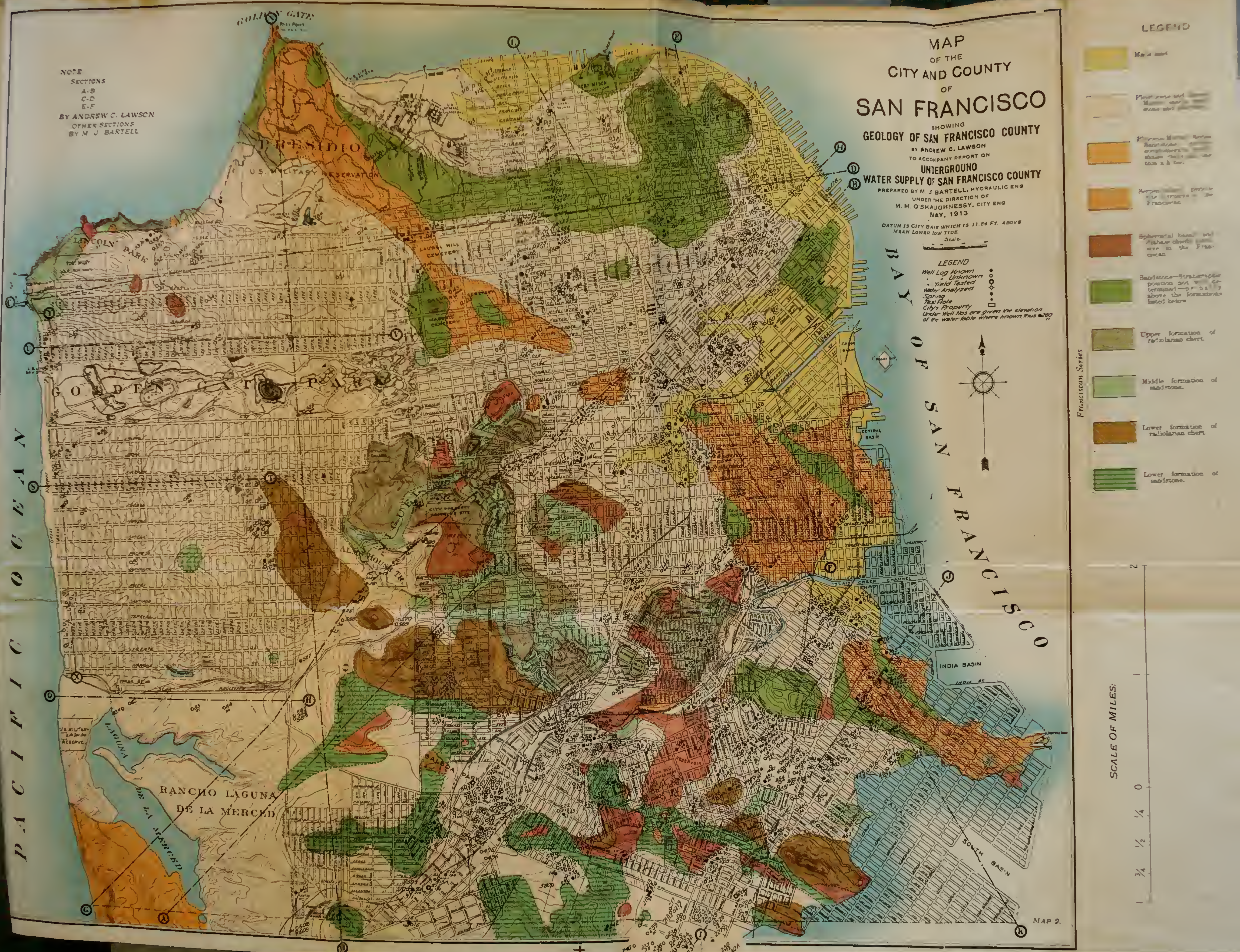
PAGE 158
MAP 1
SOUTH BASIN
CANAL
INDIA BASIN
INDIA ST
HUNTERS POINT
BUTCHERTOWN

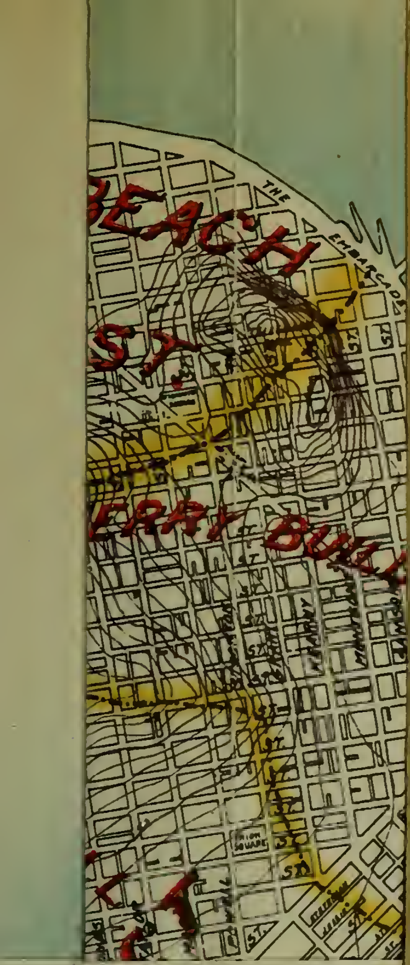


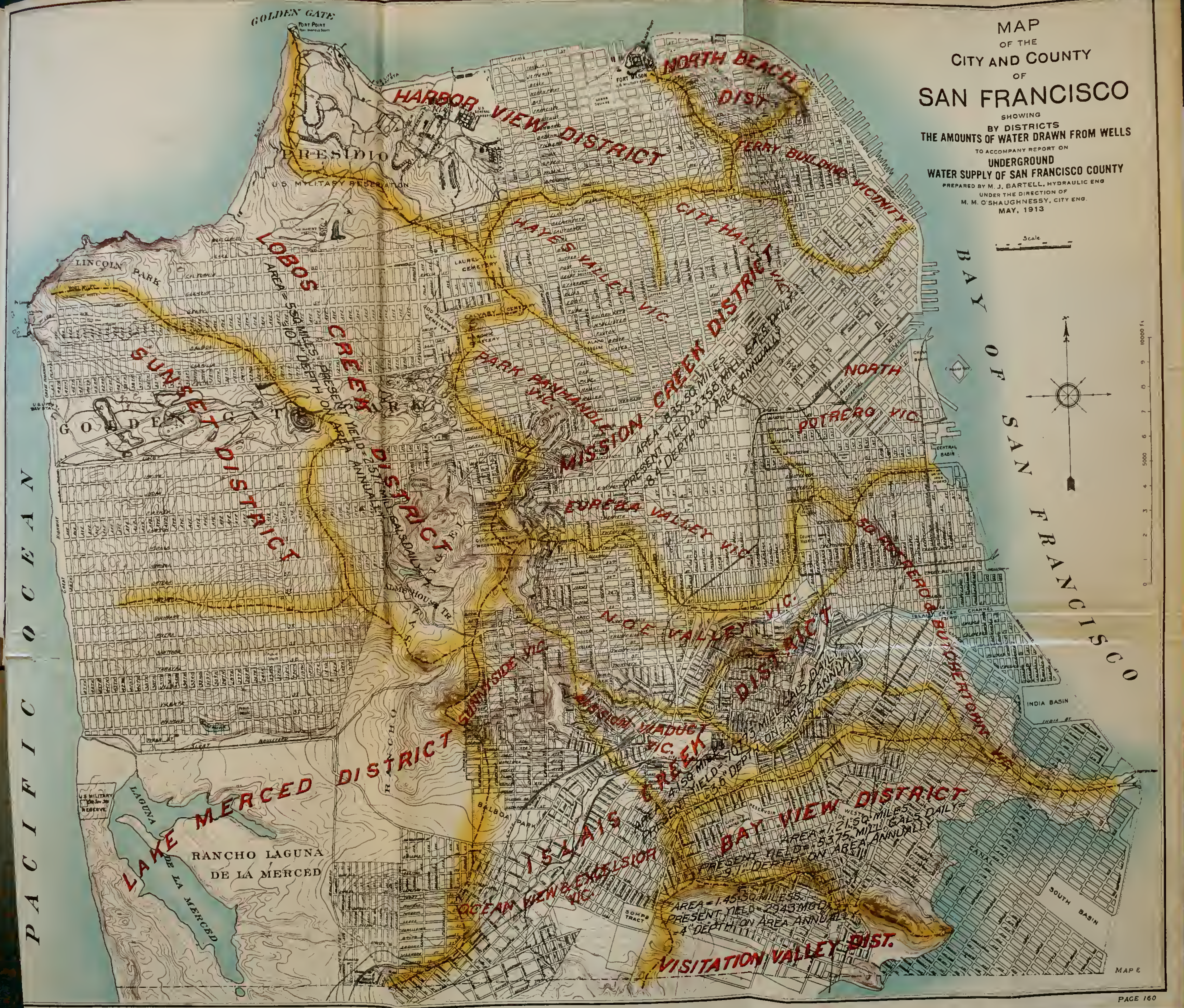
MAP
OF THE
CITY AND COUNTY
OF
SAN FRANCISCO
SHOWING
LOCATION OF WELLS
TO ACCOMPANY REPORT ON
UNDERGROUND WATER SUPPLY OF SAN FRANCISCO COUNTY
PREPARED BY M. J. BARTELL, HYDRAULIC ENG
UNDER THE DIRECTION OF
M. M O'SHAUGHNESSY, CITY ENG
MAY, 1913

DATUM IS CITY BASE WHICH IS 11.84 FT. ABOVE MEAN LOWER LOW TIDE.

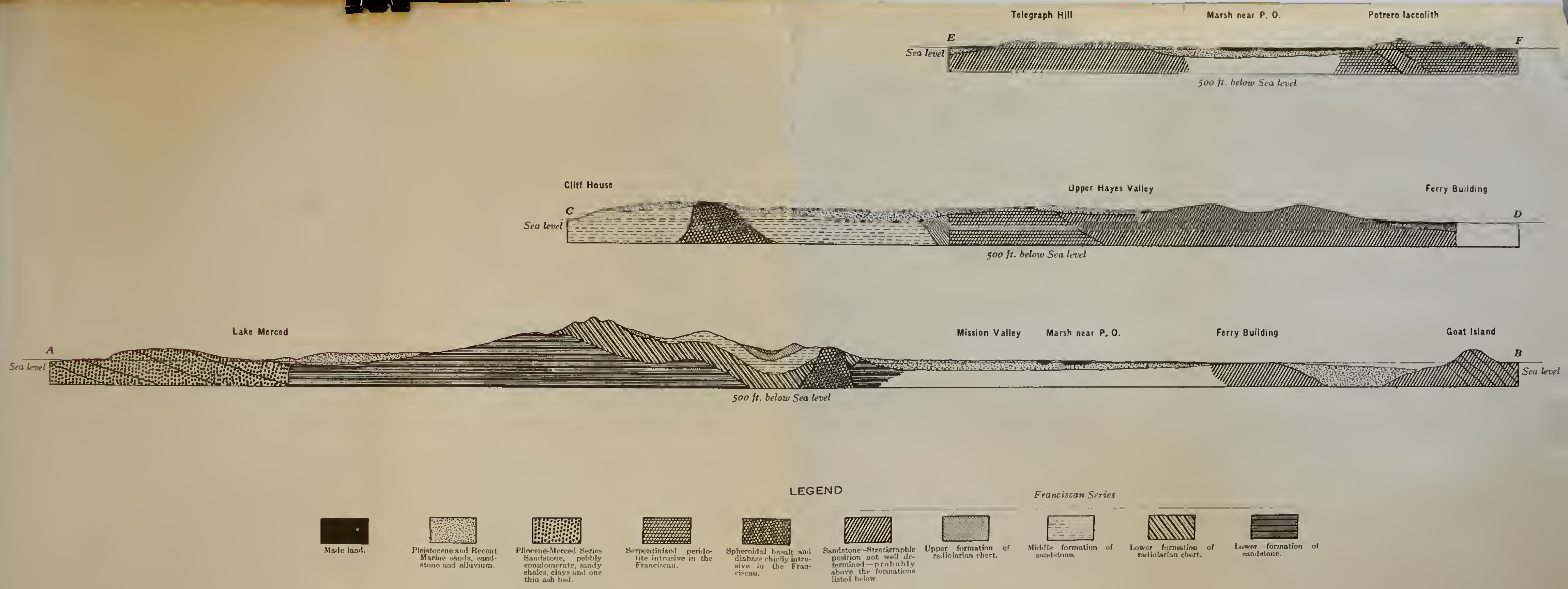



MAP
OF THE
CITY AND COUNTY
OF
SAN FRANCISCO
SHOWING
GEOLOGY OF SAN FRANCISCO COUNTY
BY ANDREW C. LAWSON
TO ACCOMPANY REPORT ON
UNDERGROUND
WATER SUPPLY OF SAN FRANCISCO COUNTY
PREPARED BY M. J BARTELL, HYDRAULIC ENG
UNDER THE DIRECTION OF
M. M. O'SHAUGHNESSY, CITY ENG
MAY, 1913
DATUM IS CITY BASE WHICH IS 11.84 FT. ABOVE MEAN LOWER LOW TIDE.
Scale
LEGEND
Well Log Known
Unknown
Yield Tested
Water Analyzed
Spring
Test Hole
Citys Property
Under Well Nos are given the elevation of the water table where known, thus 260 77
NOTE
SECTIONS
A-B
C-D
E-F
BY ANDREW C. LAWSON
OTHER SECTIONS
BY M J BARTELL
LEGEND
Made land
Pleistocene and Recent [illegible]
Pliocene–Merced Series. Sandstone, conglomerate, shales [illegible]
Serpentine [illegible] intrusive in the Franciscan
Spheroidal basalt and diabase [illegible] intrusive in the Franciscan
Sandstone—Stratigraphic position not well determined—probably above the formations listed below
Upper formation of radiolarian chert.
Middle formation of sandstone.
Lower formation of radiolarian chert.
Lower formation of sandstone.
Franciscan Series
SCALE OF MILES:
1 ¾ ½ ¼ 0 1 2
GOLDEN GATE
PRESIDIO
U.S. MILITARY RESERVATION
LINCOLN PARK
LAUREL HILL CEMETERY
GOLDEN GATE PARK
PACIFIC OCEAN
BAY OF SAN FRANCISCO
RANCHO LAGUNA DE LA MERCED
LAGUNA DE LA MERCED
U.S. MILITARY RESERVE
CITY PROPERTY
CENTRAL BASIN
ISLAIS CREEK CHANNEL
INDIA BASIN
INDIA ST.
SOUTH BASIN
RESERVOIR
CHINA BASIN
MAP 2.


BEACH
ST.
THE EMBARCADE
ERRY BUIL
UNION SQUARE



MAP
OF THE
CITY AND COUNTY
OF
SAN FRANCISCO
SHOWING
BY DISTRICTS
THE AMOUNTS OF WATER DRAWN FROM WELLS
TO ACCOMPANY REPORT ON
UNDERGROUND
WATER SUPPLY OF SAN FRANCISCO COUNTY
PREPARED BY M. J. BARTELL, HYDRAULIC ENG
UNDER THE DIRECTION OF
M. M. O'SHAUGHNESSY, CITY ENG.
MAY, 1913

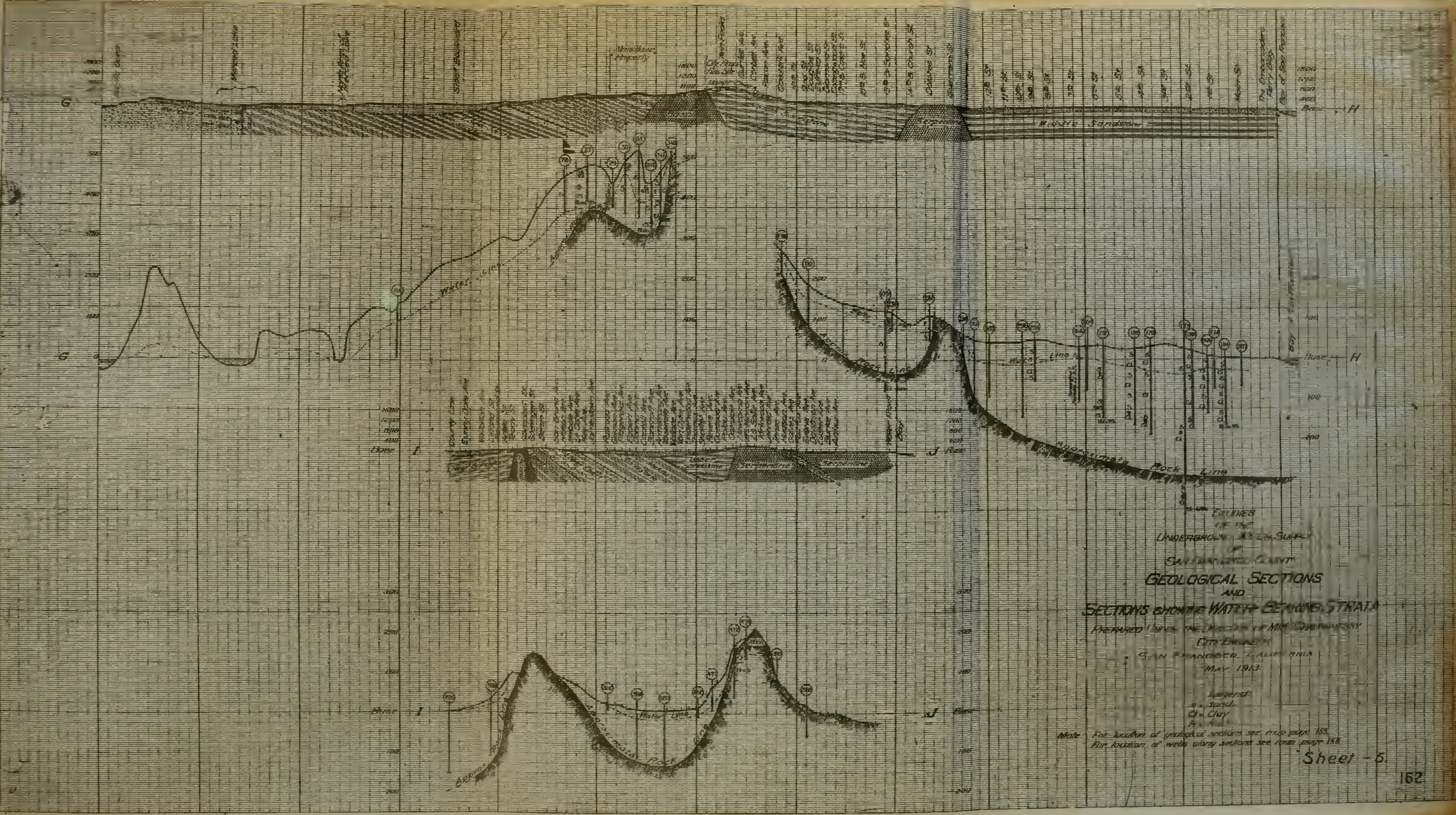

Telegraph Hill
Marsh near P. O.
Potrero laccolith
E
F
Sea level
500 ft. below Sea level
Cliff House
Upper Hayes Valley
Ferry Building
C
D
Sea level
500 ft. below Sea level
Lake Merced
Mission Valley
Marsh near P. O.
Ferry Building
Goat Island
A
B
Sea level
Sea level
500 ft. below Sea level
LEGEND
Franciscan Series
Made land.
Pleistocene and Recent Marine sands, sandstone and alluvium.
Pliocene-Merced Series Sandstone, pebbly conglomerate, sandy shales, clays and one thin ash bed.
Serpentinized peridotite intrusive in the Franciscan.
Spheroidal basalt and diabase chiefly intrusive in the Franciscan.
Sandstone—Stratigraphic position not well determined—probably above the formations listed below.
Upper formation of radiolarian chert.
Middle formation of sandstone.
Lower formation of radiolarian chert.
Lower formation of sandstone.

GEOLOGICAL SECTIONS

BY ANDREW C. LAWSON

SEE MAP 2, PAGE 159

Sheet-4



STUDIES
OF THE
UNDERGROUND WATER SUPPLY
OF
SAN FRANCISCO COUNTY

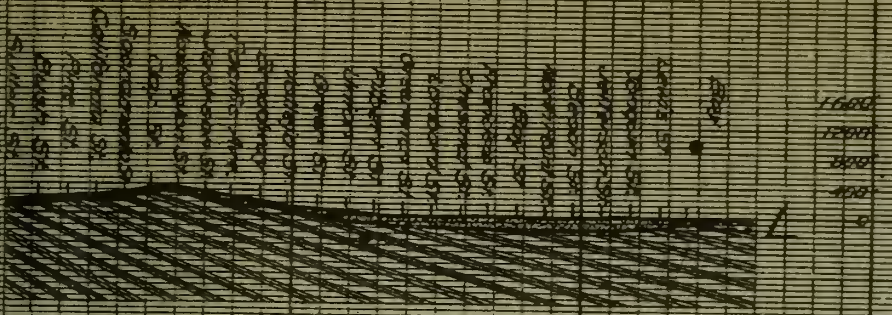
GEOLOGICAL SECTIONS
AND
SECTIONS SHOWING WATER BEARING STRATA

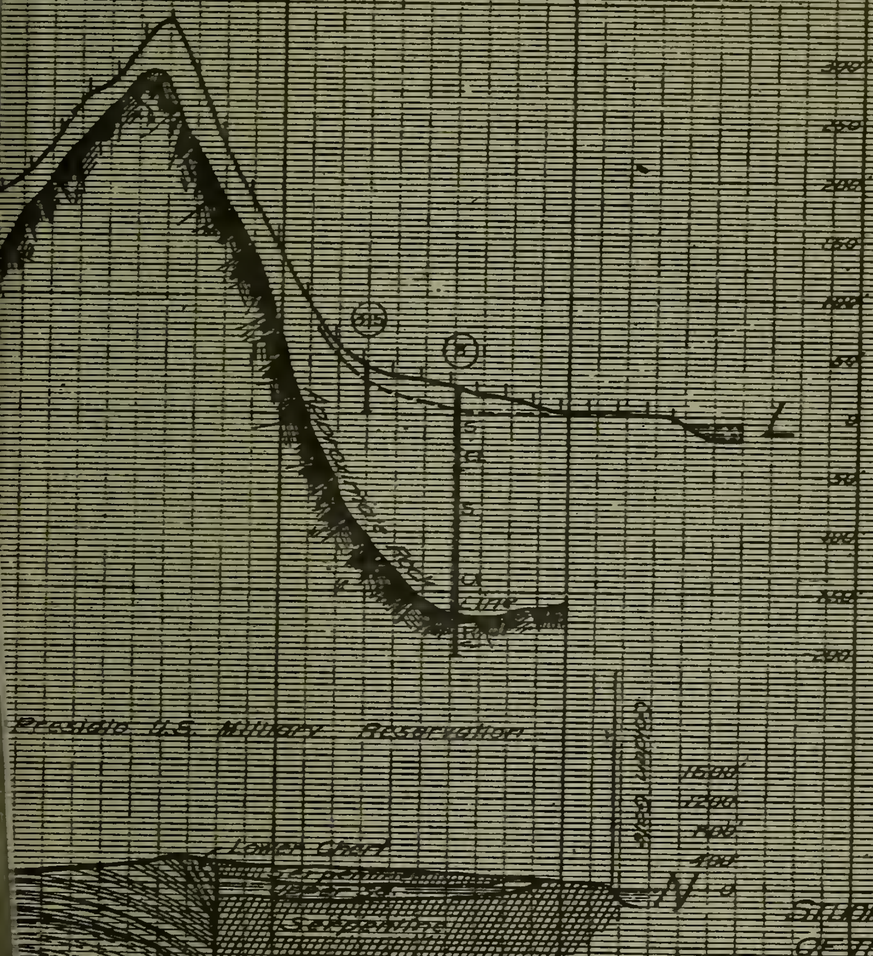
PREPARED UNDER THE DIRECTION OF M.M. O'SHAUGHNESSY
CITY ENGINEER
SAN FRANCISCO, CALIFORNIA
MAY, 1913.

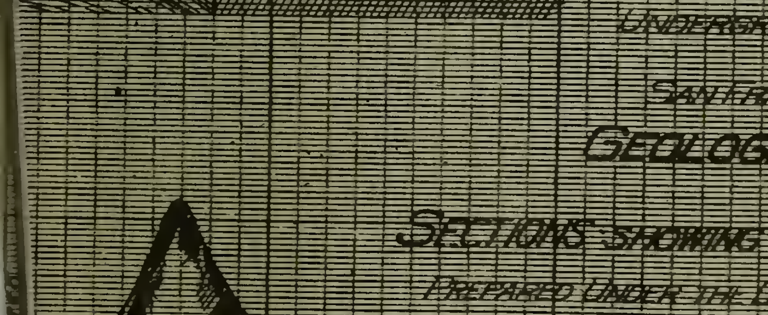
Legend
S = Sand
Cl = Clay
R = Rock

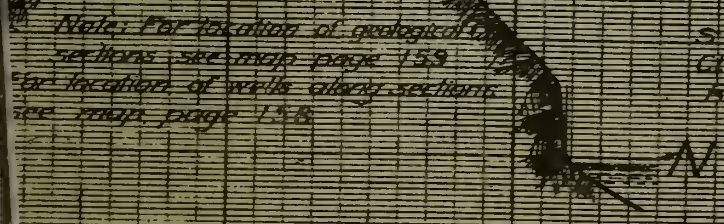
Note: For location of geological sections see map page 155.
For location of wells along sections see map page 158

Sheet - 6.









Note: For location of geological sections see map page 159.
For location of wells along sections see map page 158.

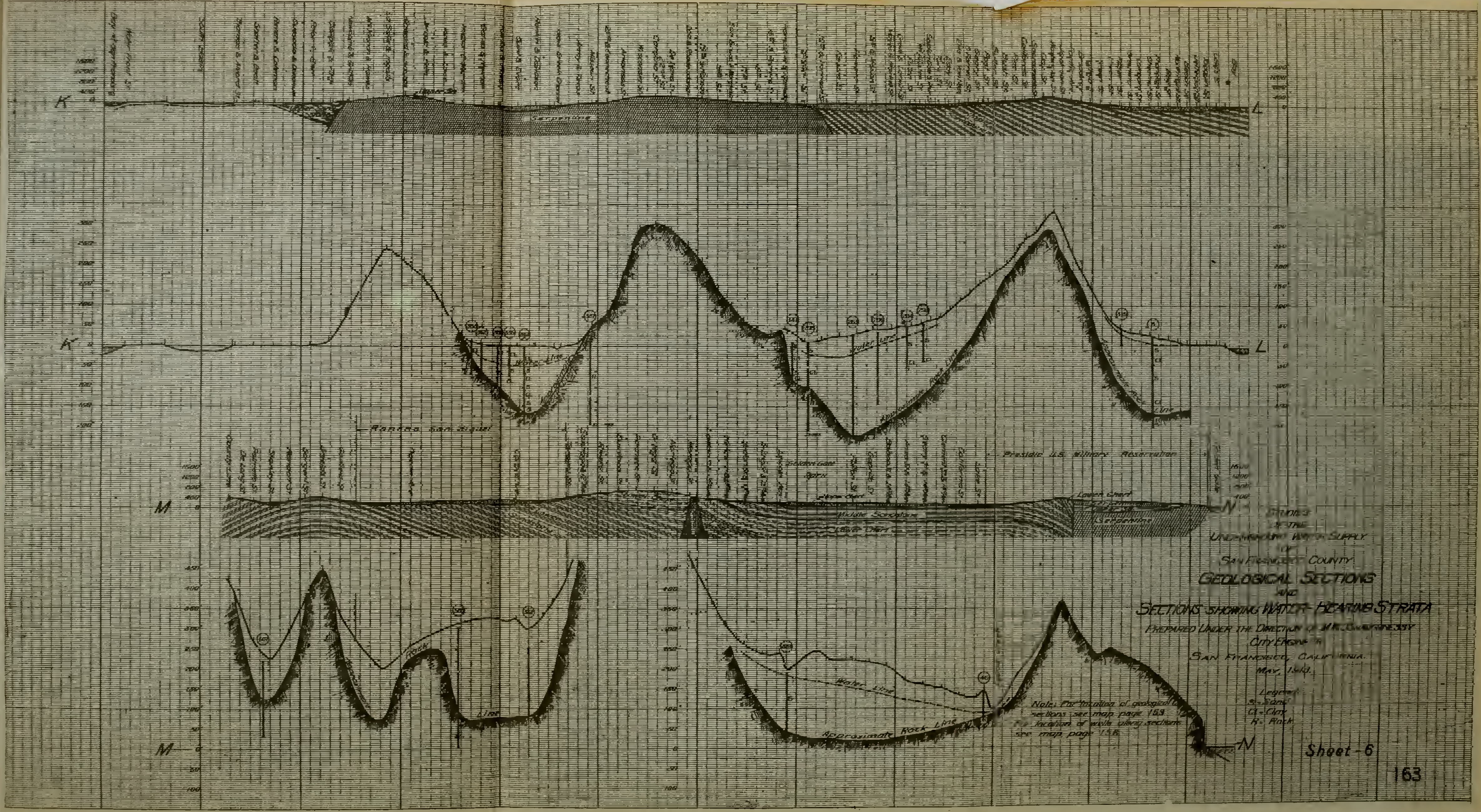
Studies
of the
Underground Water Supply
of
San Francisco County

Geological Sections
and
Sections showing Water-Bearing Strata

Prepared Under the Direction of M.M. O'Shaughnessy
City Engineer
San Francisco, California.
May, 1913.

Legend:
S - Sand
Cl - Clay
R - Rock

Sheet - 6



STUDIES
OF THE
UNDERGROUND WATER SUPPLY
OF
SAN FRANCISCO COUNTY

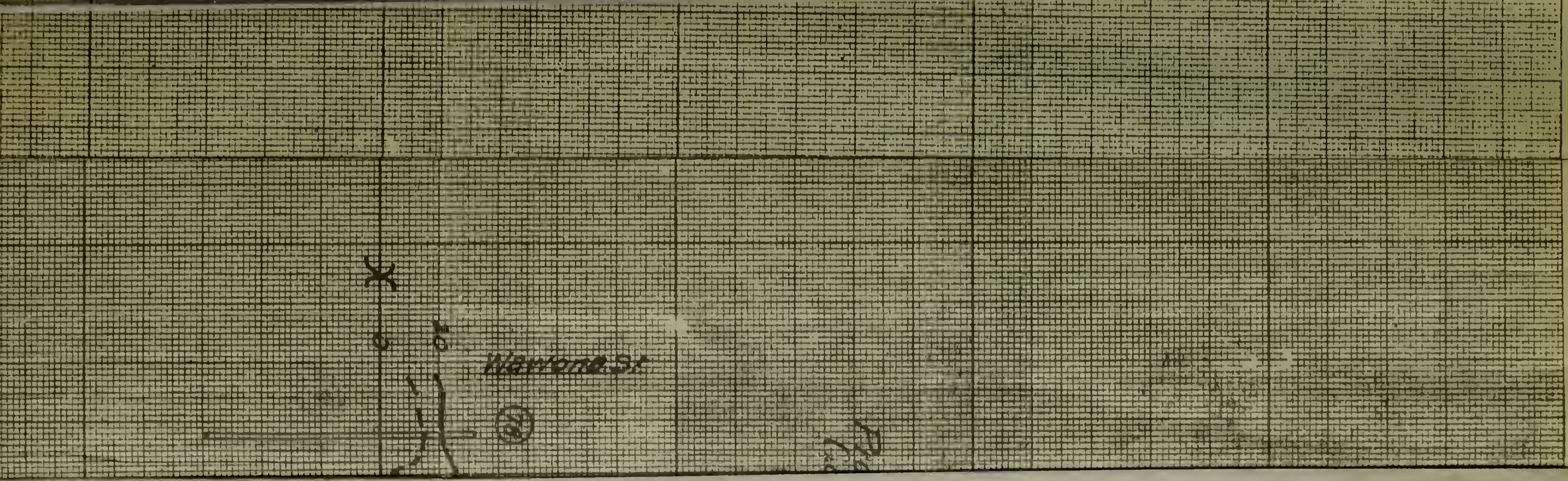
GEOLOGICAL SECTIONS
AND
SECTIONS SHOWING WATER-BEARING STRATA

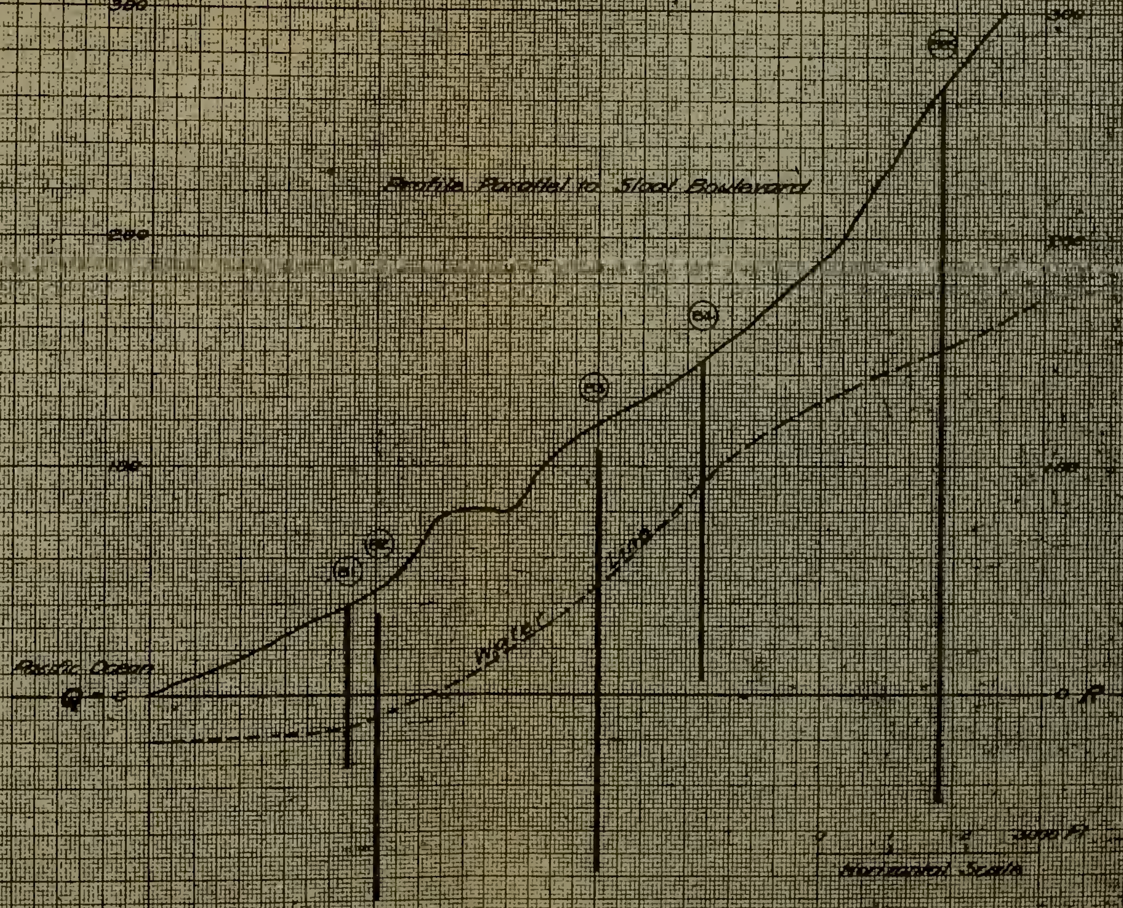
PREPARED UNDER THE DIRECTION OF M. M. O'SHAUGHNESSY
CITY ENGINEER
SAN FRANCISCO, CALIFORNIA.
MAY, 1913.

Legend:
S.-Sand
Cl.-Clay
R.-Rock

Note: For location of geological sections see map page 159.
For location of wells along sections see map page 158.

Sheet-6


X
Warren St.



Note: Walls not starting from ground line are projected from off section.

SE

r 6½X6½X6½

zzer

ple Shaft

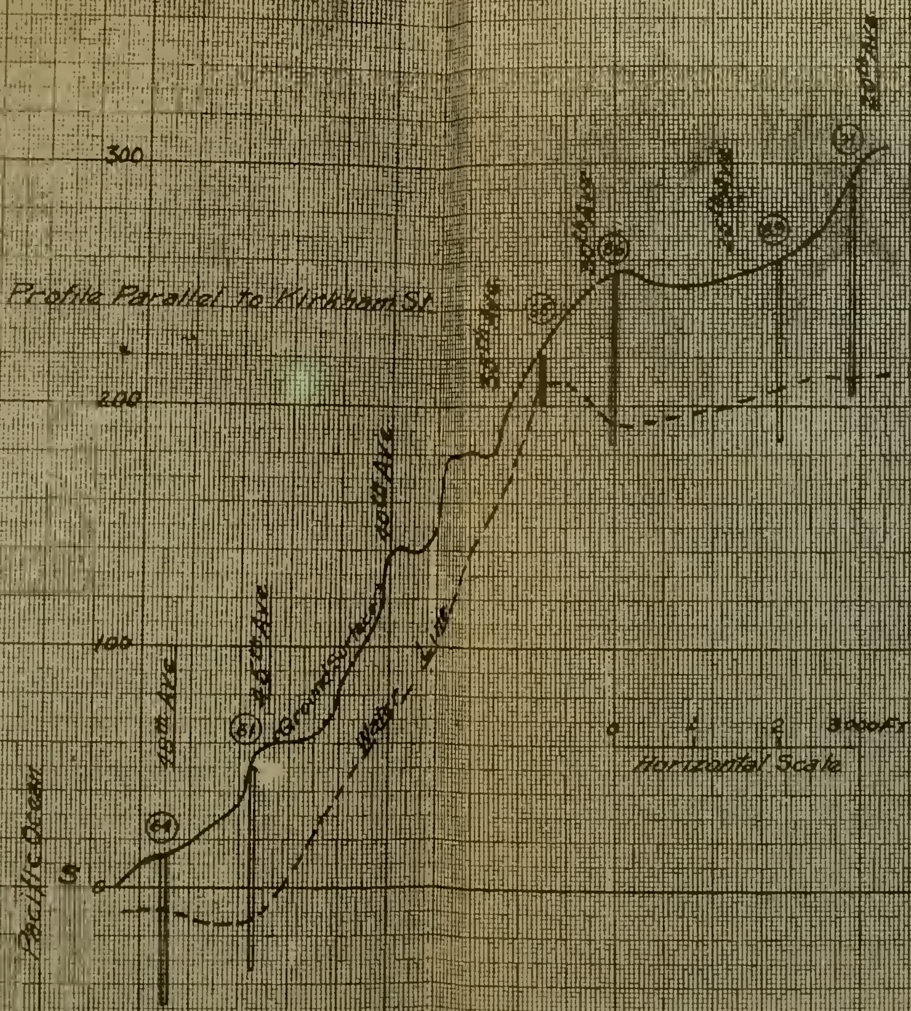
}

Nº4 Battery
held to wood
blocks on
reel.

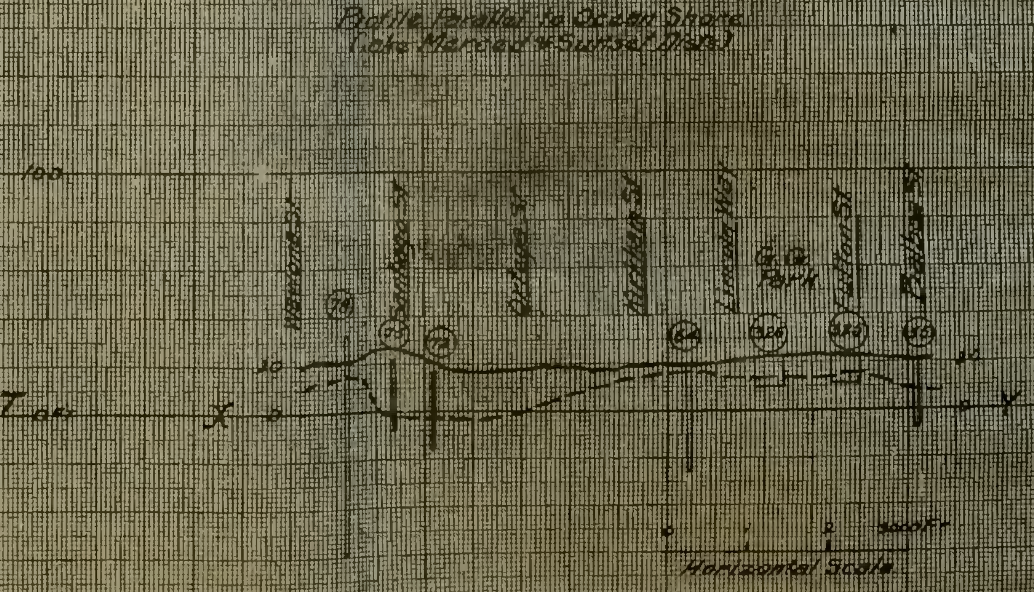
?

per Ring

E.B.



Profile Parallel to Kirkham St.



Profile Parallel to Ocean Shore
(Lake Merced & Sunset Dists.)

ELECTRICAL WELL SOUNDING DEVISE

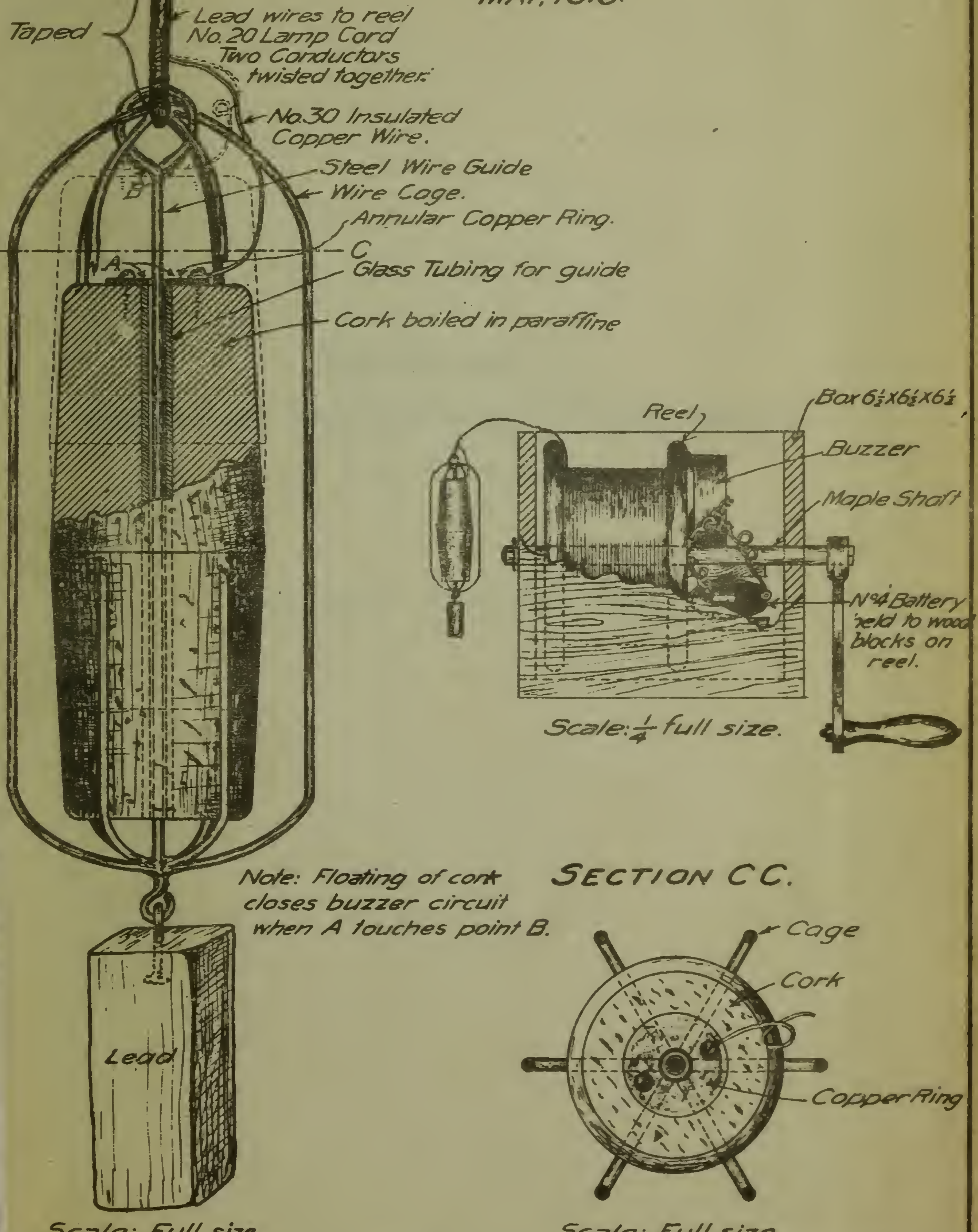
USED IN THE STUDIES OF THE

UNDERGROUND WATER SUPPLY

OF

SAN FRANCISCO, CALIFORNIA.

MAY, 1913.



Note: Floating of cork closes buzzer circuit when A touches point B.

E.B.

Supplement to
Report on Underground Water Supply of San Francisco

May, 1913 — September, 1913

Supplement to Report on the Underground Water Supply of San Francisco

May, 1913 — September, 1913

Since the submission of the foregoing report, some additional data on the underground water supply of San Francisco has been collected and is presented on the following pages.

From September 25 to October 1, several of the wells throughout the city were measured and the depth to water was obtained. These measurements, together with those obtained during the general field work in January, February and March, 1913 are herewith presented.

Aside from the field work just mentioned, no additional studies or investigations have been made since the submission of the original report in May, 1913 and the miscellaneous data here presented is such as could be collected in carrying on the regular work of this department.

In the following tabulation, showing water table, April, 1913 and September, 1913, it will be noted that the measurements are more or less inconsistent. It has already been noted (in the report proper) that it is difficult to determine the normal position of the water table, first, on account of the concentration of the wells, making them subject to the effect of the pumpage of adjacent wells; second, the periods of pumpage are such (from ten to twenty-four hours) that the water table (even if not influenced by adjacent pumpage) does not have sufficient time to return to its normal stage.

The data, however, shows that there has been no serious depletion of the underground waters, and, except for the very shallow wells, the amounts now drawn are about the same as in the earlier part of the year.

Well Measurements Locating Underground Water Table

APRIL, 1913 AND SEPTEMBER, 1913.

(See General Index to Wells for Location and Owner.)

MISSION CREEK DISTRICT—FERRY BLDG. VICINITY

Well No.	Depth to Water		Remarks
	April 1913	September 1913	
185	20.0 ft.	20.5 ft.	During a test about July 15, the water surface dropped to 87′ (drop of 67′) in one hour—pumping 6,000 gals. per hour. At end of 5 hr. test the depth to water was 90 ft. according to the engineers at the plant.
188	15.0 ft.	?	Engineer of plant says this well has not been used for two yrs. Shut down because pumping for half hour would cause the well to go dry. Well now sealed.
176	30.0 ft.	32.5 ft.	This well cannot be measured. On July 18, 1913, the normal depth to water was 32.5 ft. Four years ago this well flowed but the water was not good.
174	28.0 ft.	24.1 ft.	Pump had not run for 5 hours.
174-A	60.0 ft. (Pumping slowly)	55.2 ft.	Normal depth to water is between 53 and 54 ft. The engineer at the plant says he has measured it at irregular intervals and it has not lowered during the past 7 months. Pumping full speed will make this well dry in 4 hours.

Well Measurements Locating Underground Water Table

APRIL, 1913 AND SEPTEMBER, 1913 (Continued).

(See General Index to Wells for Location and Owner)

MISSION CREEK DISTRICT—FERRY BLDG. VICINITY (Continued)

Well No.	Depth to Water April 1913	 September 1913	Remarks
177	90.0 ft.	112.0 ft. (Pumping)	Three yrs. ago the normal depth to water was 21 ft. and 81 ft. when pumping at the rate of 6,700 gals. per hr. Yield now is only about 3,500 gals. per hour.
171	70.0 ft.	48.0 ft.	Cannot measure, but June 28, the well was cleaned and normal depth to water was 48.0 ft., it lowers to 100 ft. when pumping.
172	20.0 ft.	22.0 ft.	Cannot measure now. On July 12, the well was cleaned and the normal depth to water was 22 ft. After pumping one-half hour the capacity is reduced to about one half what it is at the start. They pump about 3 hrs. per day at the average rate of 2,000 gals. per hr. The water is brackish and not fit to drink. For 6 months after the earthquake, the tide water stood 2 ft. deep on this basement floor, then gradually receded until at the end of 7 months there was no further evidence of it.

MISSION CREEK DISTRICT—CITY HALL VICINITY

165	20.0 ft.	21.0 ft.	The pumping plant in this building is in operation practically 12 hrs. per day. The depth to water on Sept. 18, while pumping was 55.8 ft. Measurement by the engineer at the plant in first part of August gave the normal depth to water as 21.0 ft.
205	40.0 ft. (Pumping)	31.1 ft.	Pump had been shut down for 16 hours.
261	15.0 ft.	18.0 ft.	Measured Sept. 17, while well was being cleaned—18.0 ft. normal—Engineer at plant says it lowers from 20 to 30 ft. during pumping. Water is slightly brackish and is not used for drinking purposes.
299	50.0 ft.	55.07 ft.	Cannot measure—engineer at plant says the normal depth to water on July 1st was 55.0 ft. when well was cleaned.
298	50.0 ft.	58.1 ft.	Measured Sept. 19, after pump had been shut down for 4 hours.

MISSION CREEK—HAYES VALLEY VICINITY

291	40.0 ft.	....	Cannot measure.
286	15.0 ft.	15.0 ft.	
273	12.5 ft.	14.5 ft.	
281	32.2 ft.	33.5 ft.	

Well Measurements Locating Underground Water Table

APRIL, 1913 AND SEPTEMBER, 1913 (Continued)

(See General Index to Wells for Location and Owner)

MISSION CREEK—EUREKA VALLEY VICINITY

Well No.	Depth to Water		Remarks
	April 1913	September 1913	
115	14.0 ft.	14.8 ft.	
130	Flows	18.0 ft.	
133	32.0 ft.	....	Cannot measure—filled up.

HARBOR VIEW DISTRICT

Well No.	April 1913	September 1913	Remarks
2	12.2 ft.	12.6 ft.	
314	5.3 ft.	6.5 ft.	

BAY VIEW DISTRICT

Well No.	April 1913	September 1913	Remarks
426	35.0 ft.	46.0 ft.	
410	17.0 ft.	17.0 ft.	
408	25.0 ft.	34.0 ft.	
409	15.0 ft.	18.0 ft.	
406	15.0 ft.?	43.0 ft.	
417	17.0 ft.	....	Cannot measure.
418	25.0 ft.	25.0 ft.	
420	20.0 ft.	27.0 ft.	
429	25.0 ft.	29.0 ft.	
430	14.0 ft.	....	Would not allow measurement.
432	22.0 ft.	22.0 ft.	
446	8.0 ft.	15.0 ft.	
454	20.0 ft.	15.0 ft.	
469	12.0 ft.	15.5 ft.	
470	26.0 ft.	....	Cannot measure.
471	32.0 ft.	38.0 ft.	
481	5.0 ft.	2.0 ft.	Measurement is not reliable—Spring Valley water runs into well.
476	10.0 ft.	12.5 ft.	
471-A	27.0 ft.	Dry	

Well Measurements Locating Underground Water Table

APRIL, 1913 AND SEPTEMBER, 1913 (Continued)

(See General Index to Wells for Location and Owner)

BAY VIEW DISTRICT—(Concluded)

Well No.	Depth to Water		Remarks
	April 1913	September 1913	
471-B	45.0 ft.	Dry	
460	5.0 ft.	12.7 ft.	
604	Flows	Flows	

ISLAIS CREEK DISTRICT—EXCELSIOR AND OCEAN VIEW VICINITY

Well No.	April 1913	September 1913	Remarks
15	140.0 ft.	140.0 ft.	
497	Flows	Flows	
612	17.0 ft.	20.5 ft.	Water used as "Mineral Water".

ISLAIS CREEK DISTRICT—NOE VALLEY VICINITY

Well No.	April 1913	September 1913	Remarks
151	Flows	Flows	
344	Flows	15.0 ft.	
343	Flows	Flows	Yield of well considerably less than in April.

VISITACION VALLEY DISTRICT

Well No.	April 1913	September 1913	Remarks
225	Flows	10.0 ft.	Was measured Sept. 15, 1913.
231	Flowing	13.3 ft.	

LAKE MERCED AND SUNSET DISTRICTS

Well No.	April 1913	September 1913	Remarks
64	3.7 ft.	5.3 ft.	
72	16.0 ft.	17.5 ft.	
75	22.0 ft.	23.0 ft.	
89	52.0 ft.	62.0 ft.	Pumping.
78	23.0 ft.	22.0 ft.	Was measured on August 25, 1913.
65	....	21.5 ft.	Pumping.
85	13.0 ft.	13.0 ft.	
55	20.0 ft.	15.0 ft.	Was measured about July 1, 1913.
51	45.0 ft.	32.5 ft.	

LOBOS CREEK DISTRICT

Well No.	April 1913	September 1913	Remarks
36	26.0 ft.	33.0 ft.	

Municipal Water Works Well

WELL No. 206:

During the tests of this well (March 24th and April 10th—see report proper) the water table dropped from -16 feet to -61 feet. Well No. 229 about 1,000 feet S. E. toward the bay, at which the ground surface elevation is about 0, the water table dropped from 0 to -7.7 ft.

On September 28th the normal water table at Well No. 206 was about -30 feet and at No. 229 about -17 feet. After 12 or 14 hours pumping, No. 206 dropped to -65 feet and No. 229 dropped to -22 feet.

This shows a drop in the normal water table for this locality of about 16 feet.

The average daily pumpage of the Municipal Well, No. 206 from February, 1913 to date was as follows:—

1913	Gals.	1913	Gals.	1913	Gals.	1913	Gals.
Feb.	65,400	Apr.	75,000	June	85,000*	Aug.	94,600
Mar.	58,000	May	80,000*	July	95,800	Sept.	117,050

*Estimated.

48th Avenue Sewer and Golden Gate Park North Wind Mill

During the construction of the 48th Avenue Sewer, a partial record was kept of the amount of seepage water pumped. The water was handled by two centrifugal pumps and measured by means of a current meter.

The sewer trench between Fulton and Cabrillo Streets was about 600 ft. long by 15 ft. wide, the elevation of the bottom at the time of these measurements being at about -5 feet.

The normal elevation of the water in this trench was at +14 feet. The average amount pumped was 1½ million gallons daily, which corresponds to a drop of 19 feet in this trench.

The pumpage record of the North Windmill in Golden Gate Park owned and operated by the City, was obtained from the engineer at the plant from 1907 to date. A summarized table of this record is presented in this supplement. This plant pumps its water directly from a sump 12 feet by 240 feet by about 10 feet deep.

During the early period of the construction of the 48th Avenue Sewer, this office kept a record of the relative elevations of the water table in the sewer trench and the Park Windmill sump, and also the amounts of water pumped from both places. The 1½ million gallons daily pumped from the sewer trench had no appreciable effect on the Park windmill sump. During the last few weeks, some of the water pumped from the sewer trench was delivered through a by-pass directly into the sump feeding the Park Windmill and therefore the recent measurements of the water-table at this plant are not reliable.

The Park Windmill sump is at present partially silted up with sand and if this is cleaned out it is believed that the yield of the plant can be materially increased.

Well No. 613 on Exposition Grounds

This is a 13½-inch well—400 feet deep—with 20 feet of No. 7 wire screen for perforations between the depths of 138 feet and 158 feet. It was drilled for the Panama-Pacific Exposition Company and is located near the intersection of Bay and Buchanan Streets. The log of this well is given below.

TEST ON EXPOSITION WELL NO. 613

By Lane & Bowler Co., June 12, 1913.

This well was pumped continuously for 48 hours at the rate of 400 gallons per minute. This lowered the water table from 5 feet below the top of the casing (or elev. +12 ft. ±) to 92 ft. below the top (or elev. -75 ft.) a total drop in the water table of 87 feet.

This is the highest yield of any bored well in the city of San Francisco of which we have any record. It is questioned whether this yield could be maintained for any considerable time. The tributary drainage area is small and the continuous withdrawal of this amount of water would probably seriously affect the water table, and consequently reduce the yield.

The same company is starting to drill a new well near the Presidio incinerator.

There were two test holes sunk, one at the Baker Street entrance to the Fair Grounds (77 feet to rock—no water) and the other in Tennessee Hollow (Presidio), 120 feet to soft rock; 140 feet to solid rock—no water).

Log of Well No. 613 on Exposition Grounds

Depth	Depth of Strata	Formation Found at Each Stratum
Feet	Feet	
0		
60	60	Surface sand.
90	30	Coarser surface sand.
98	8	Grey sand.
118	20	Sand and blue clay streaks.
138	20	Blue clay.
158	20	Fine Blue water sand (Wire Screen No. 7 inserted in casing).
280	132	Tough blue clay.
360	80	Hard dark blue shale.
400	40	Hard dark blue shale with boulders.

Water Drawn by the North Wind Mill—Golden Gate Park

Month	1907		1908		1909	
	Total for Month	Mean Daily	Total for Month	Mean Daily	Total for Month	Mean Daily
Jan......	1,046,300	33.750	308,900	9,970	No pumping	
Feb......	1.390.000	49,640	200,900	6.910	No pumping	
Mar.....	243,900	7,870	814,400	27,150	83,100	2,680
Apr.....	1,719,200	57,310	No pumping		3,179,500	105,980
May.....	5,398,200	174,200	2,603,800	84,000	5,074,100	163,750
June.....	3.540,400	118,010	4,675,200	155,830	5.597,400	186.570
July.....	3,848,300	124,200	4,118,700	132,900	4,809,300	155,200
Aug......	3,551,500	114,650	4,336,300	139,800	4,080,600	131,750
Sept.....	790,000	26,330	1,371,400	45,710	2,768,500	92,280
Oct......	230,600	7,440	608,500	19,600	389,200	12,550
Nov.....	62,300	2,070	No pumping		No pumping	
Dec......	140.100	4,520	No pumping		98,800	3.200
Total....	21,960,800	60,000	19.038.100	51.500	26,080.500	71.200

Month	1910		1911		1912	
Jan......	No pumping		937.300	30.250	No pumping	
Feb.....	No pumping		No pumping		58,400	2,010
Mar.....	No pumping		No pumping		No pumping	
Apr.....	3,142,400	104,740	1.513.750	50.460	1,210.100	40,340
May.....	3,347,500	108.000	4,653,800	150.100	4,830,500	155,800
June.....	5,550,500	185.020	4,508,300	150,270	5.385,700	179,520
July.....	4,191,500	135.200	3,083,900	99.400	4,527,200	146,200
Aug......	2.710.900	87.500	2.234.300	72,080	4,861,500	157,000
Sept.....	1,177,800	39.260	1,787,200	59,570	3.239,301	107,950
Oct......	460,600	14.860	338,900	10,930	3,080,525	99,400
Nov.....	1,425,910	47.530	198,800	6.630	31,525	1,000
Dec......	1,736,800	56,000	521,800	16.840	14,885	500
Total....	23.743.900	64.800	19.778.050	53.900	27,239,636	74.100

1913 Month	Total for Month	Mean Daily	1913 Month	Total for Month	Mean Daily
Jan.............	No pumping		June............	5,652,555	188,250
Feb.............	No pumping		July............	7,525,455	242,600
Mar.............	797,625	25,800	Aug.............	6,510,970	210,000
Apr.............	3,246,080	108,200	Sept............	5,915,855	196,800
May.............	6,103,277	196,750			

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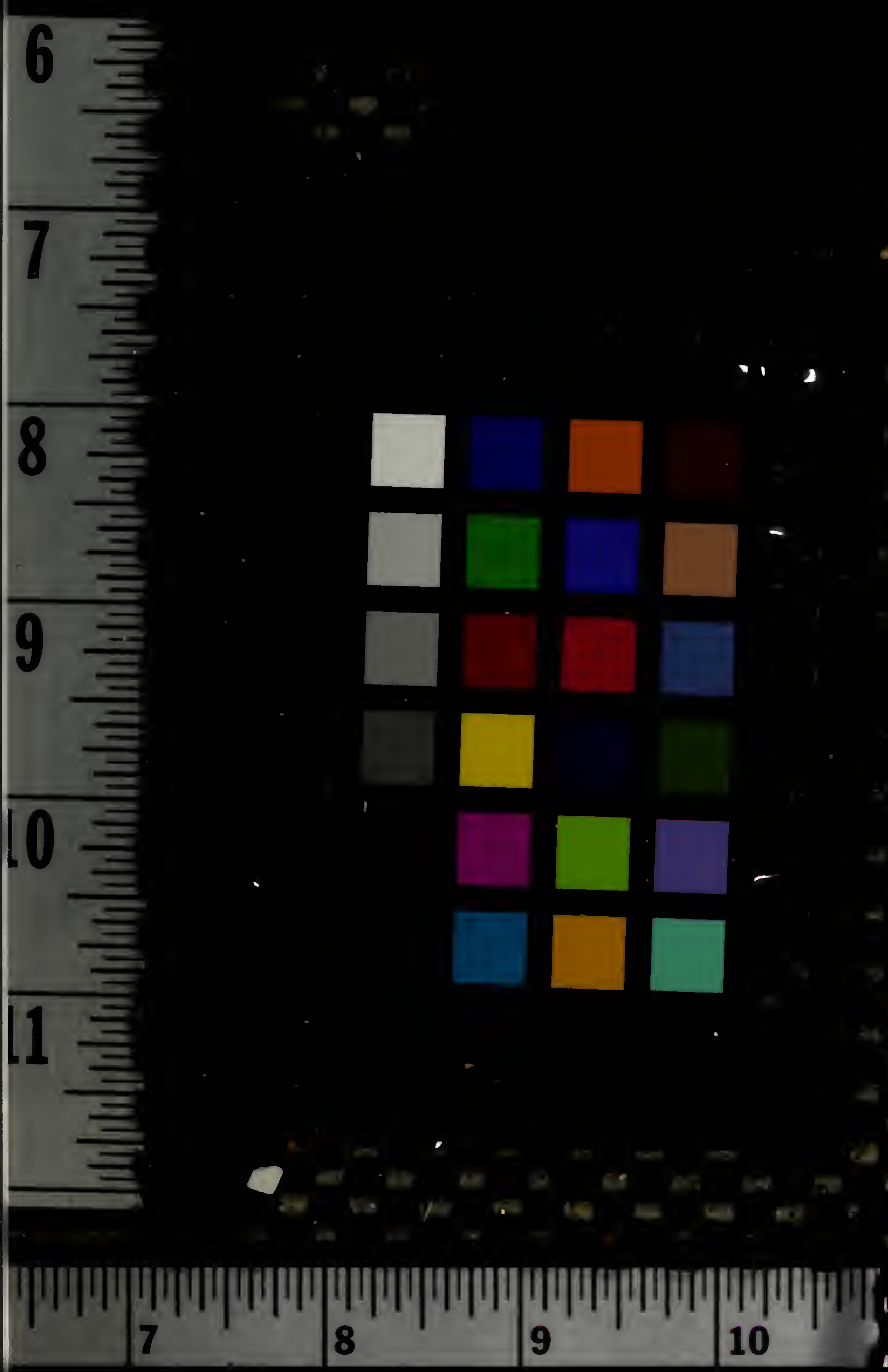
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